

U. S. Department of Agriculture

MANUFACTURERS' RECORD

A WEEKLY SOUTHERN INDUSTRIAL
RAILROAD AND FINANCIAL NEWSPAPER.

A poor man can make his little money go further in the South than in any other section of this country.

A man of moderate means can find better opportunities in the South for engaging in business than in any other part of the country.

A manufacturer with limited capital can find better sites, can buy his raw materials cheaper and can make larger profits from his business in the South than elsewhere in the United States.

A man who can command large amounts of capital can find in the South opportunities for investments that will pay him larger returns than any other opportunities that the world can offer.

The poor man must be industrious, the man of moderate means must be careful, the manufacturer must be a master of his trade, and the capitalist must have good judgment and use it.

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\$4.00 per year.
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Baltimore, July 1, 1892.

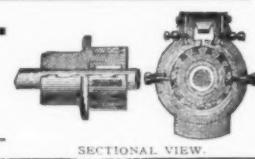
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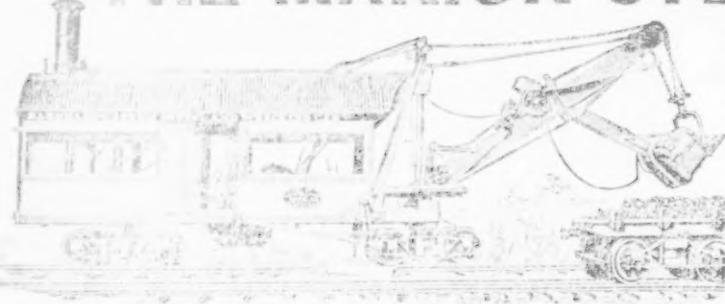
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Continuous Elevated Tramway System

THE FAYETTE-BROWN PATENT AUTOMATIC FURNACE HOIST.

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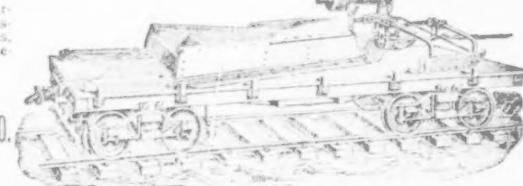
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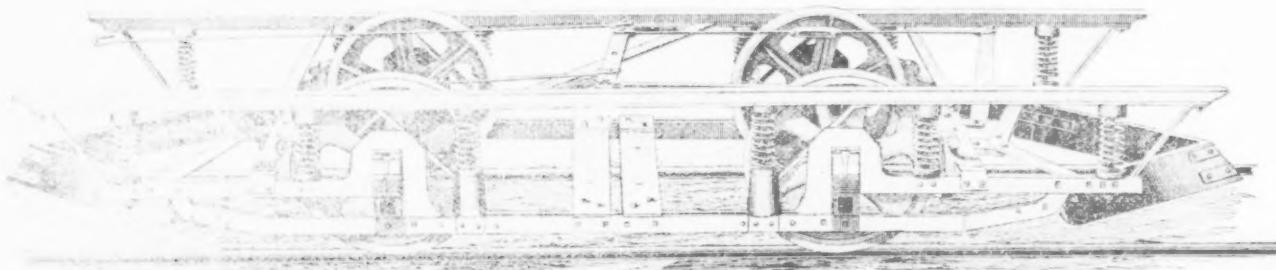
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Acid Chambers. Charleston Lead Co., Charleston, S. C.	Struthers, Wells & Co., Warren, Pa. J. Ed. Morris, Atlanta, Ga.	Todd Pulley & Shafting Works, East St. Louis, Ill.	Cottonseed-oil Machinery. Carver Cotton Gin Co., East Bridgewater, Mass.
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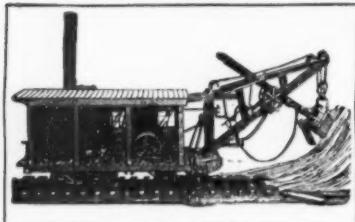
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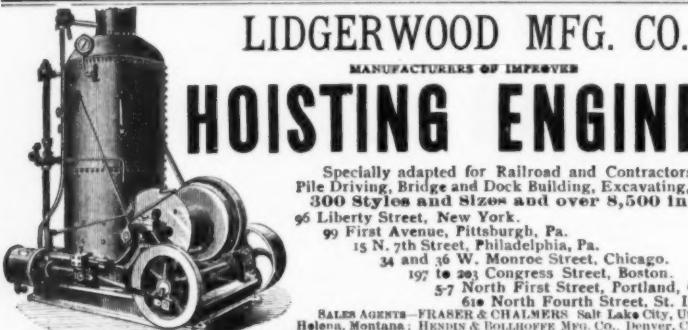
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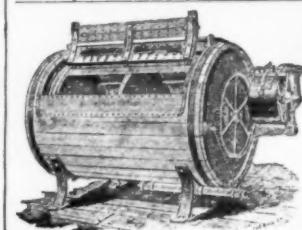
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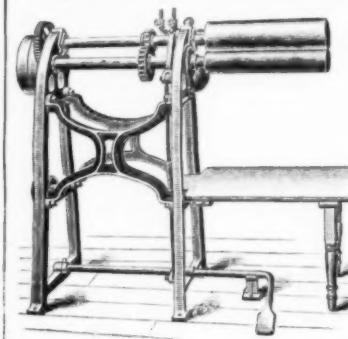
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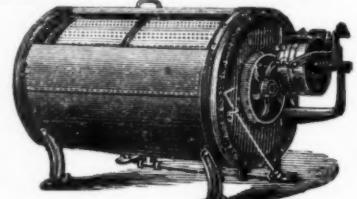
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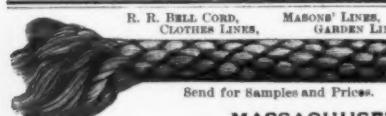
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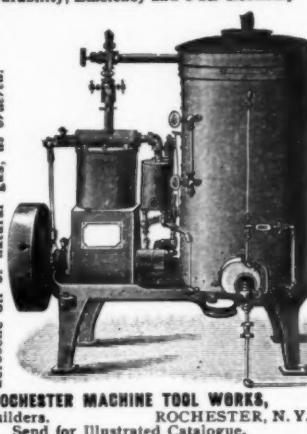
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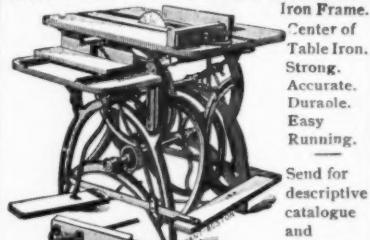
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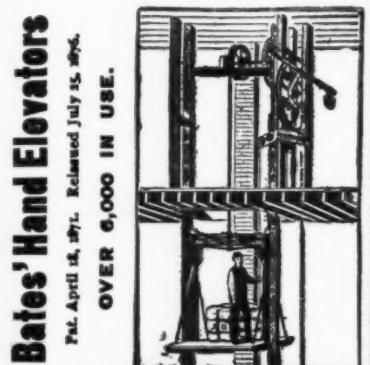
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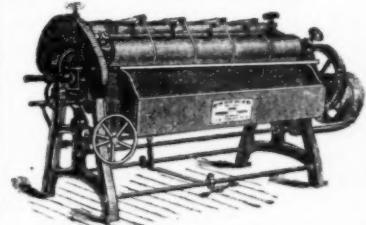
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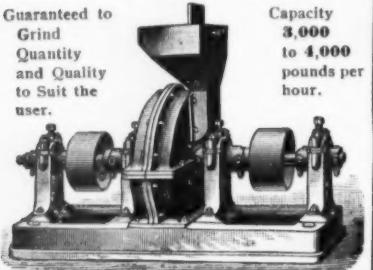
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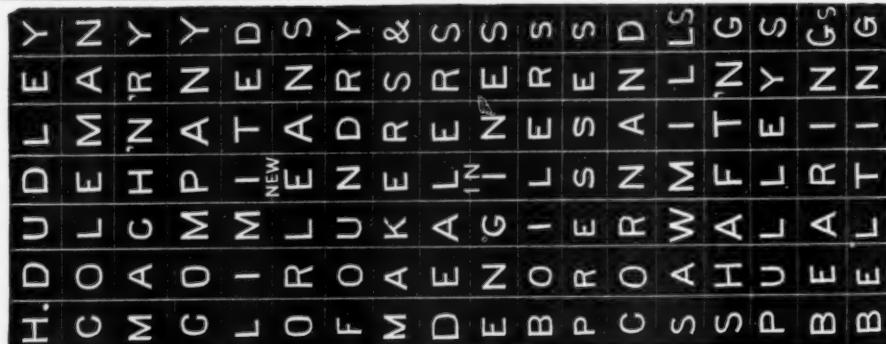


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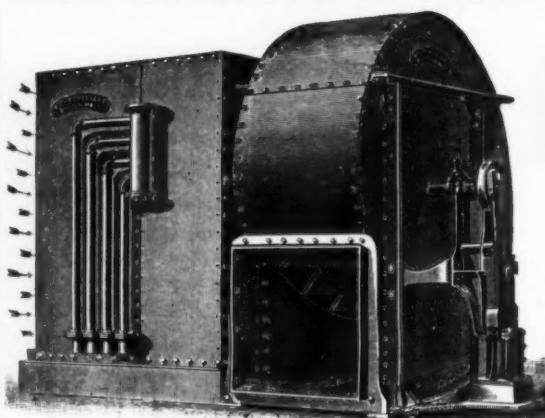
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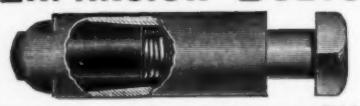
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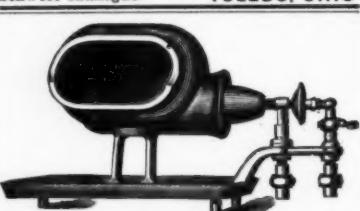


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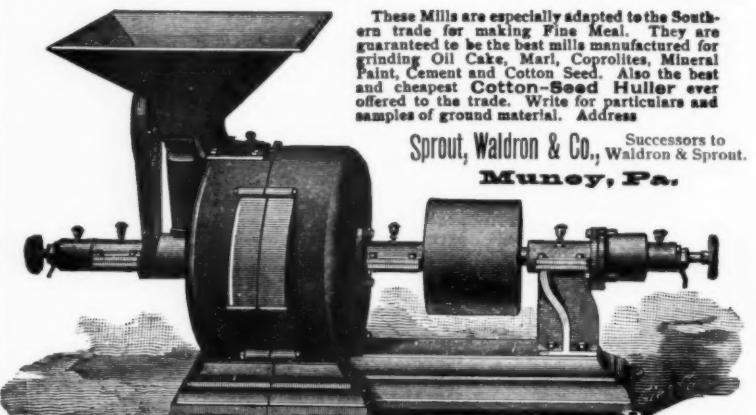
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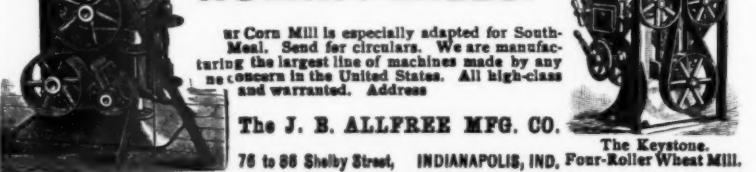
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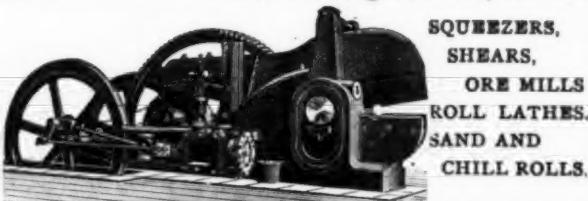
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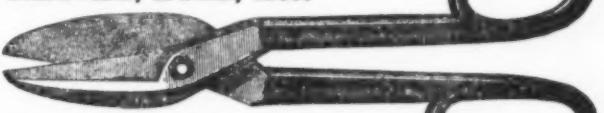
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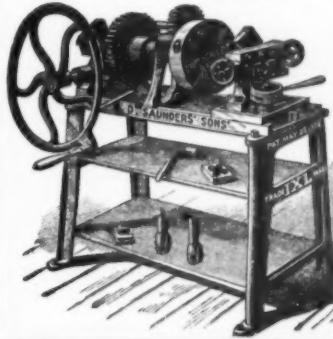
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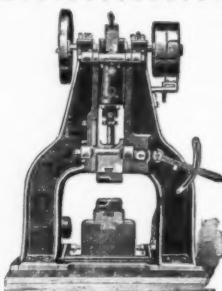
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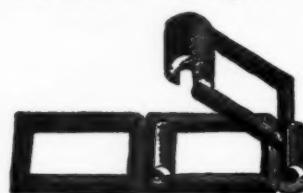
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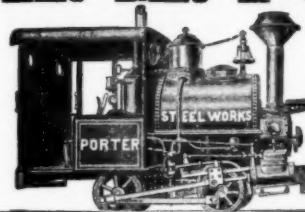
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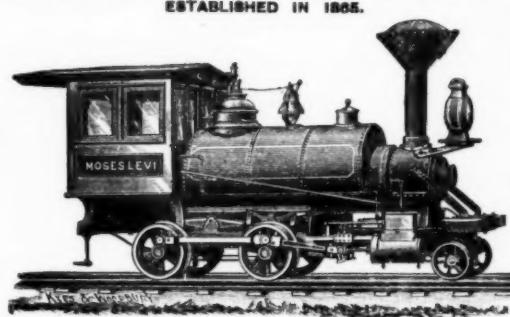
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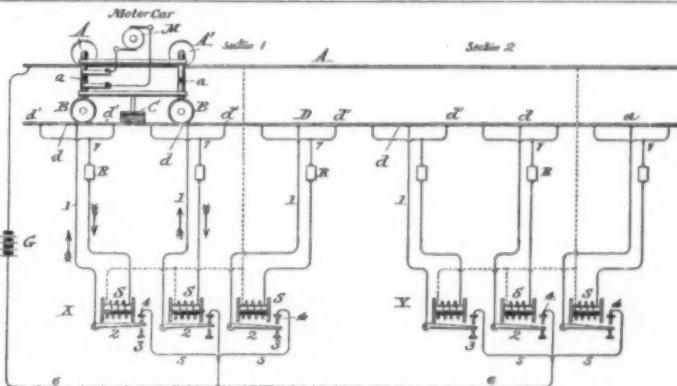


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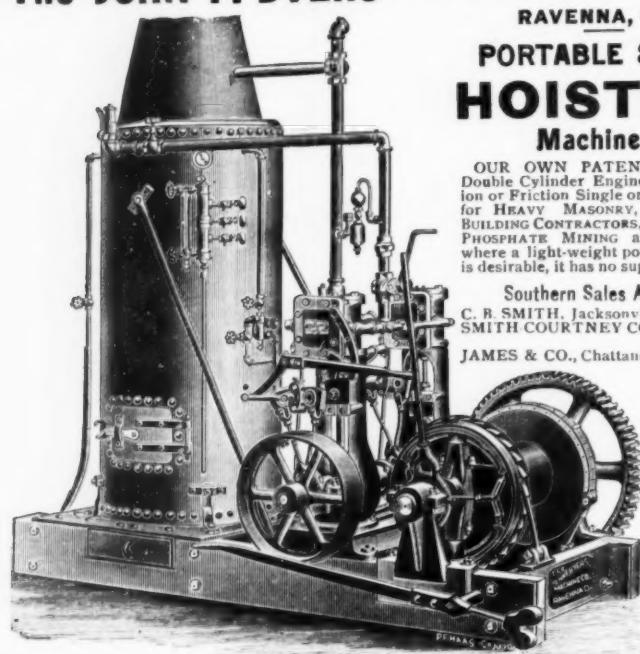
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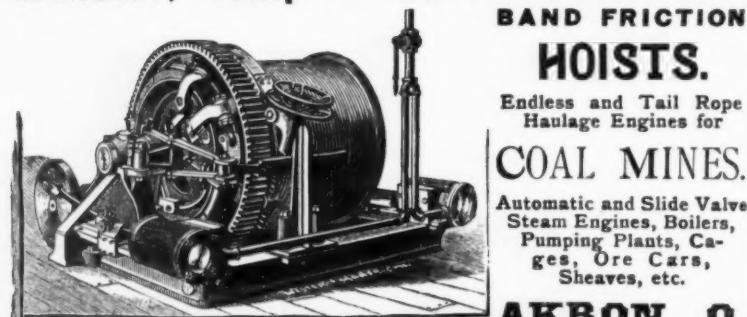


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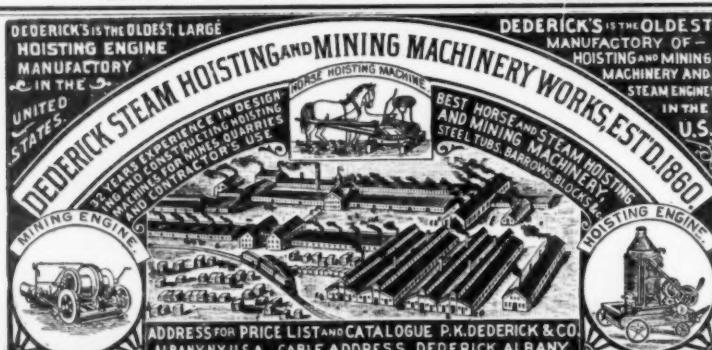
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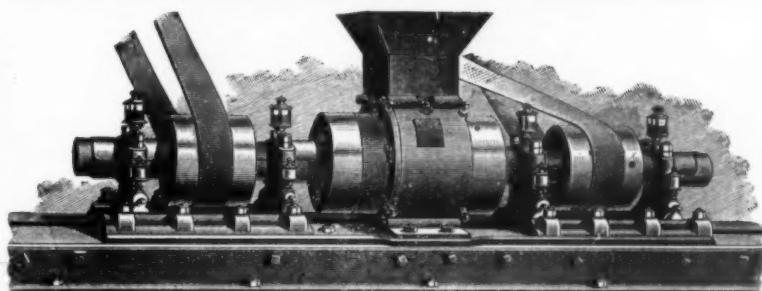
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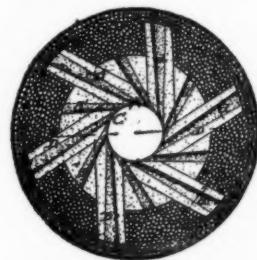
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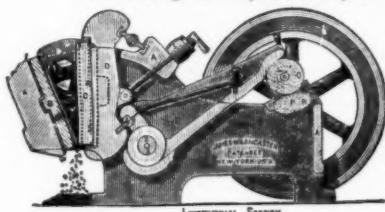
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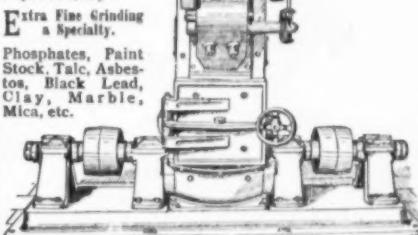
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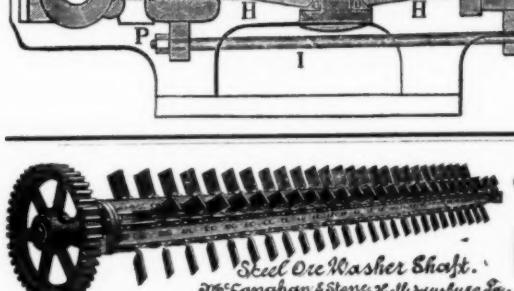
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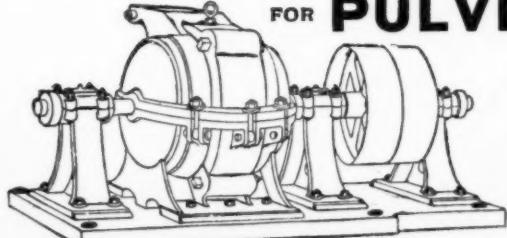
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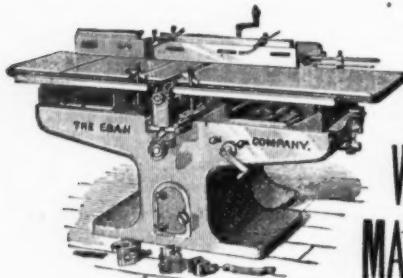
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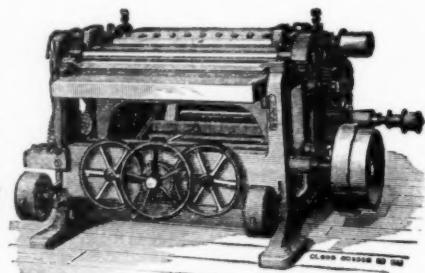
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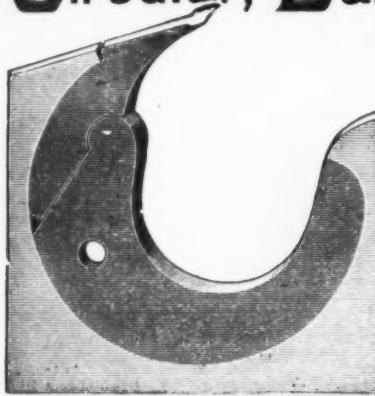


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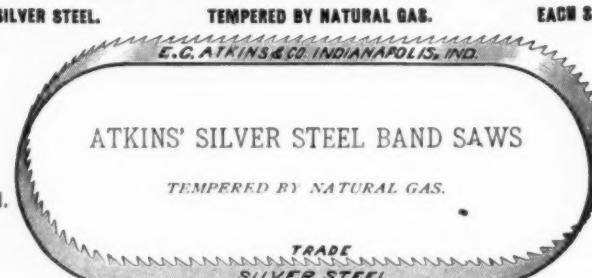
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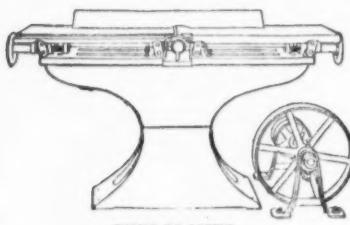
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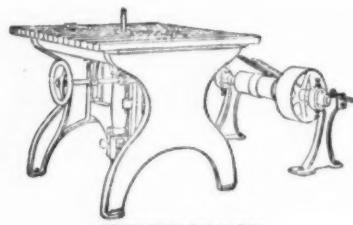
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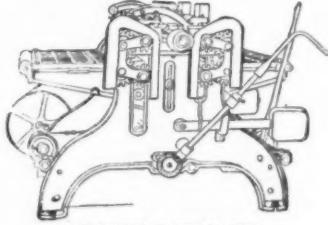
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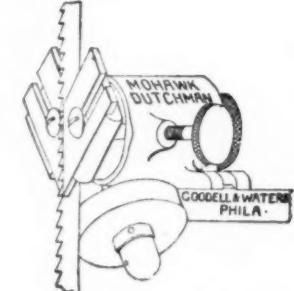
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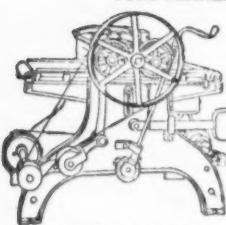
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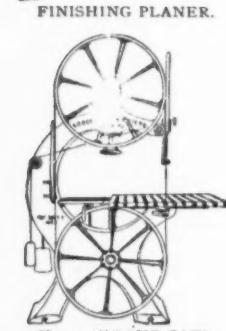


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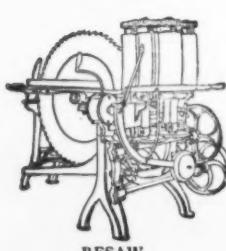
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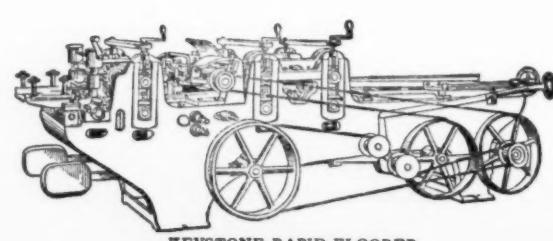
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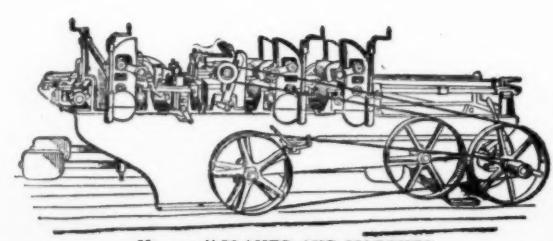
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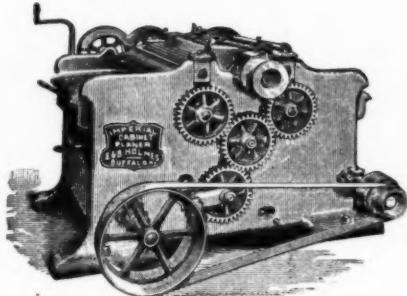


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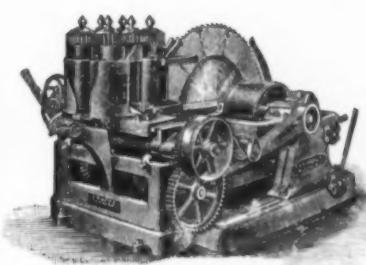
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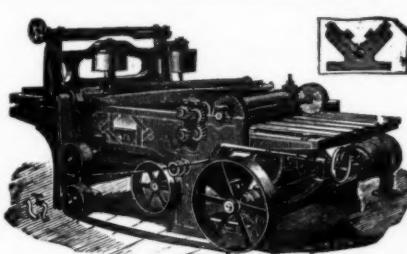
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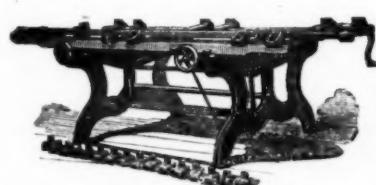
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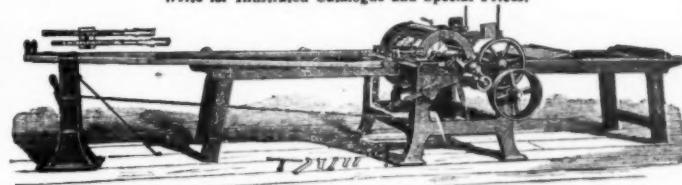
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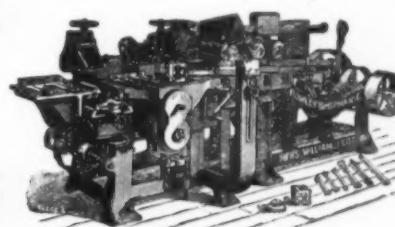
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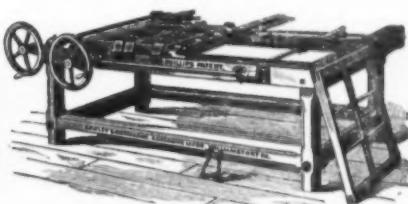
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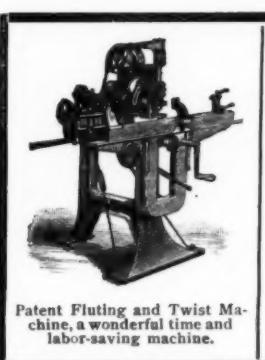
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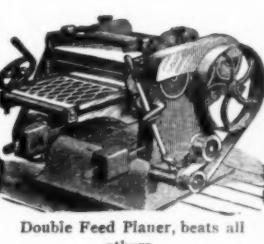


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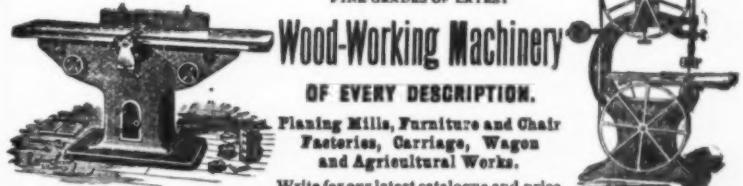
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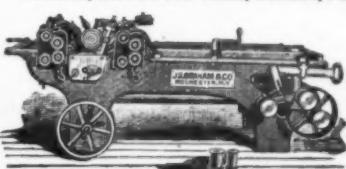
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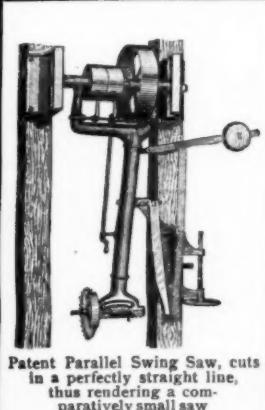
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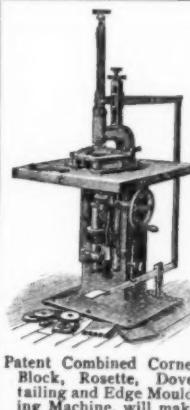
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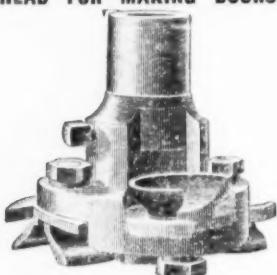
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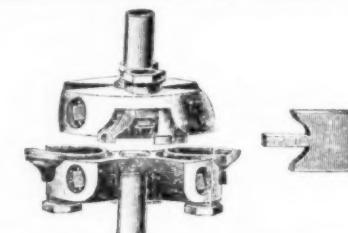
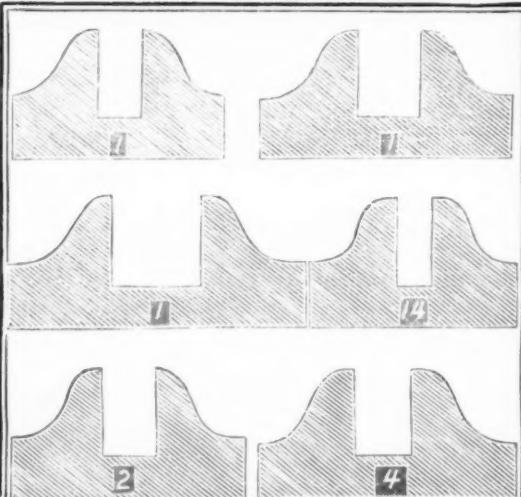
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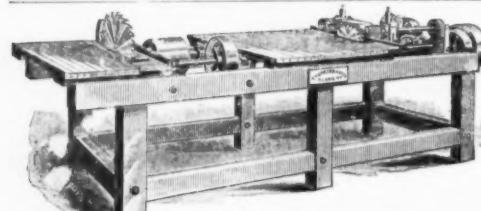


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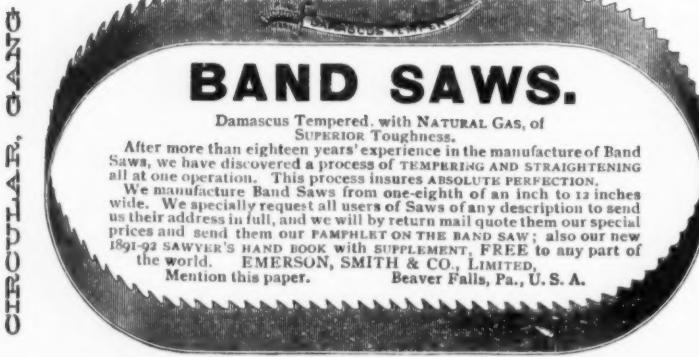
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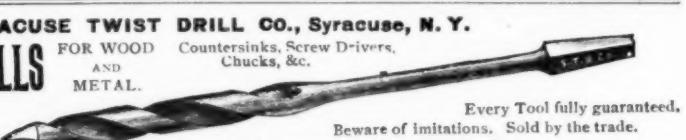
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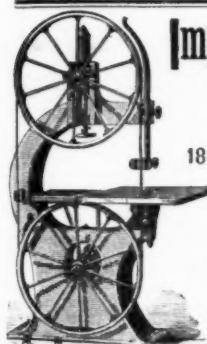
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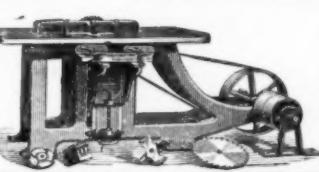
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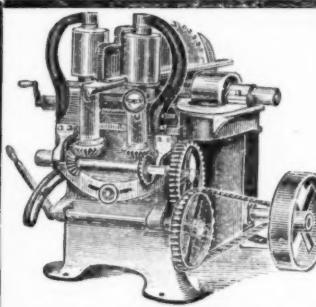
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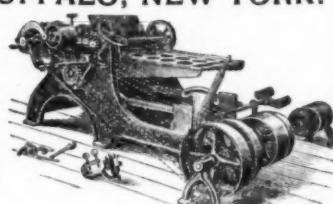
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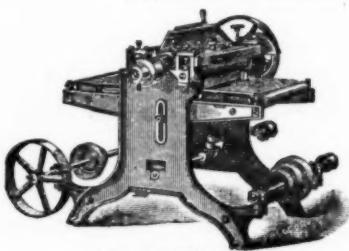
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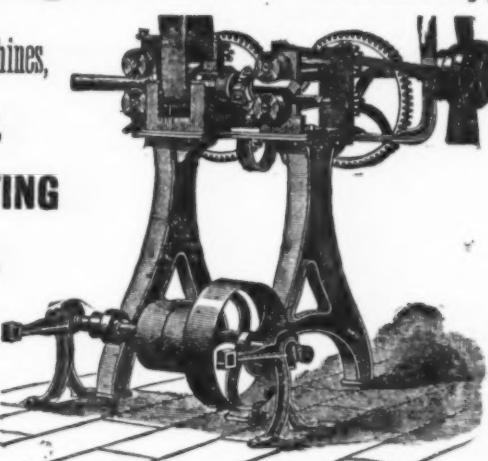
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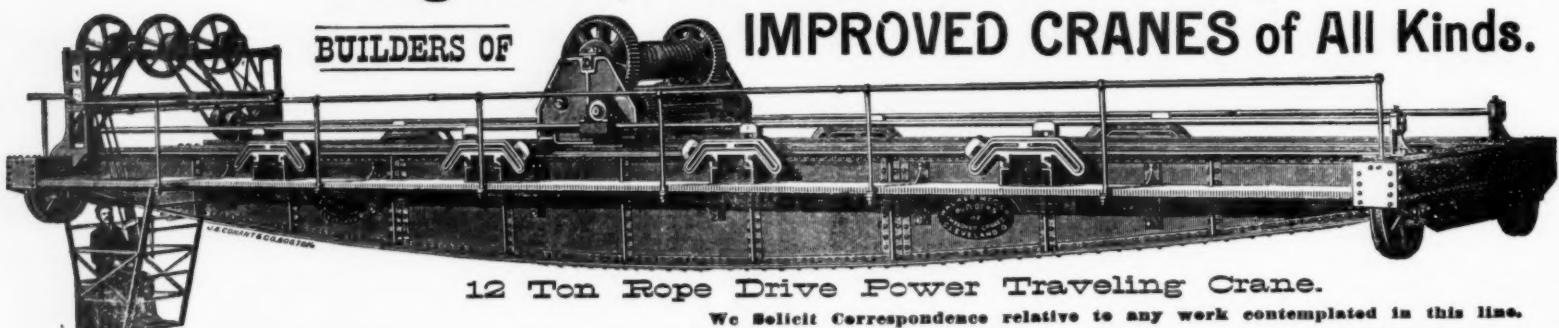
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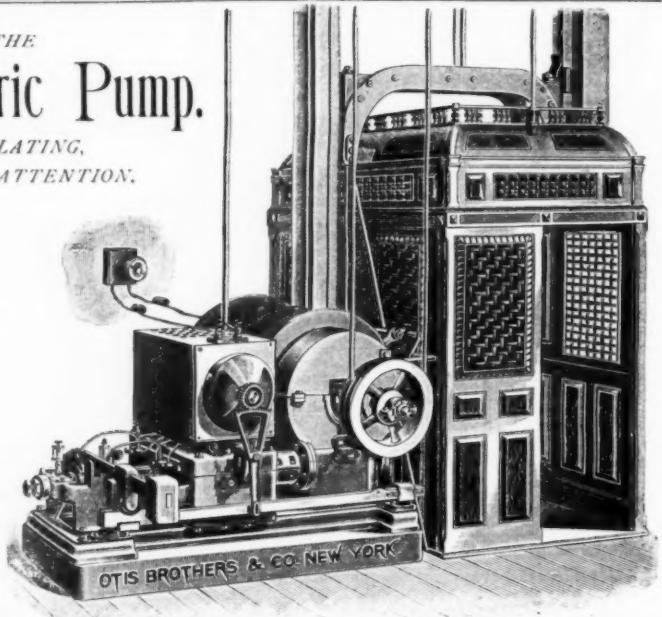
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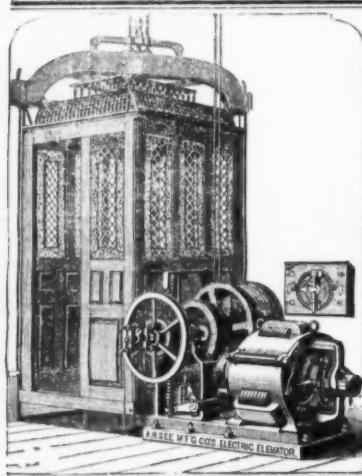
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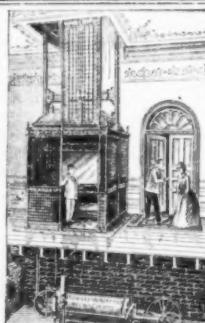


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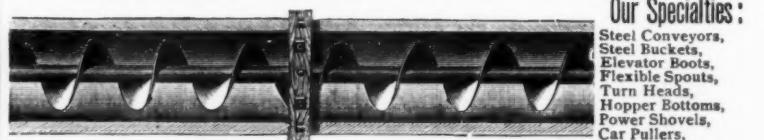
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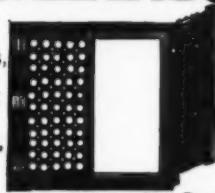
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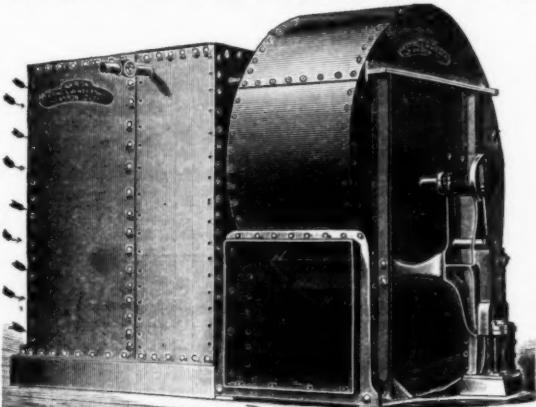
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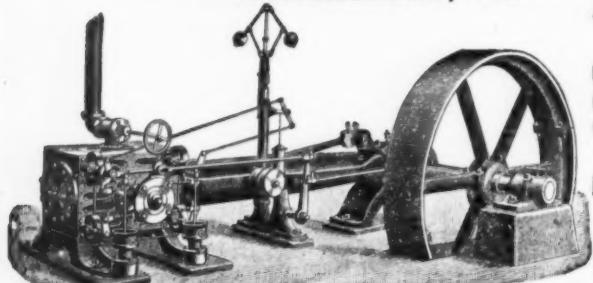
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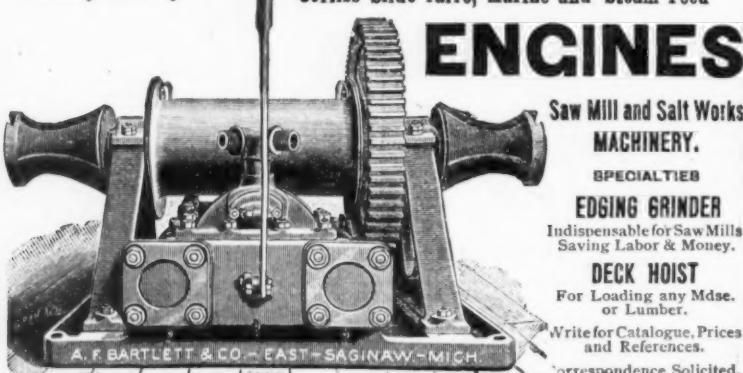
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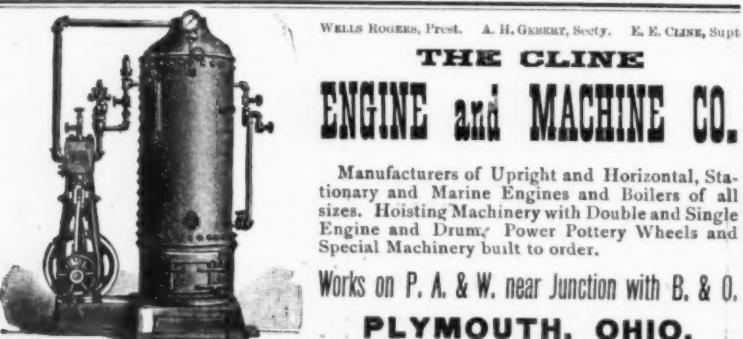
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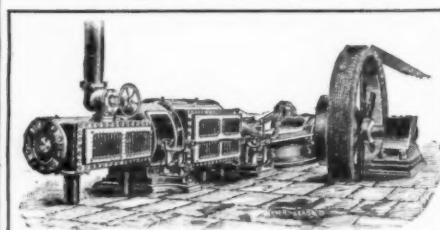


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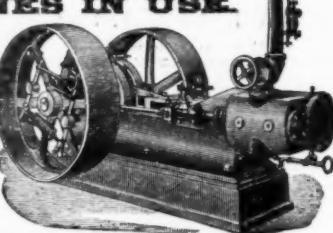
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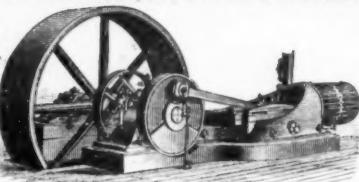
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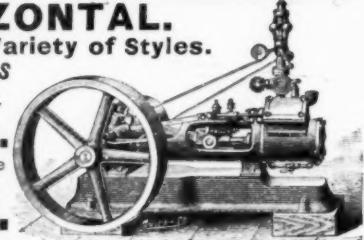
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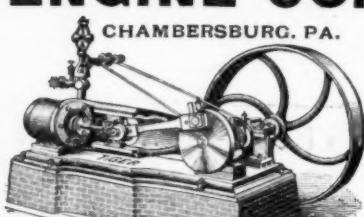
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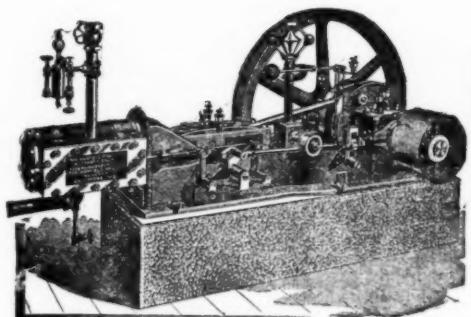
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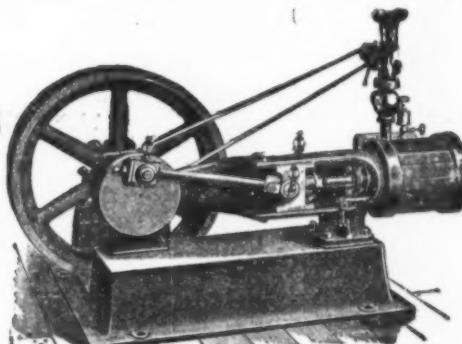
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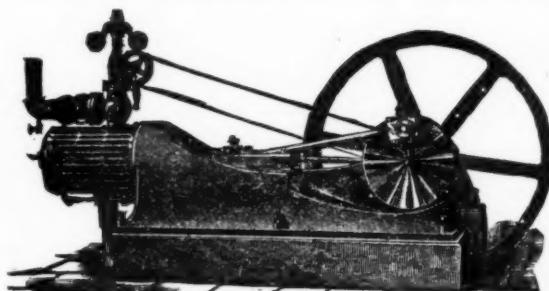
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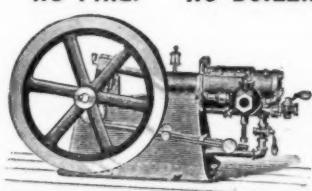
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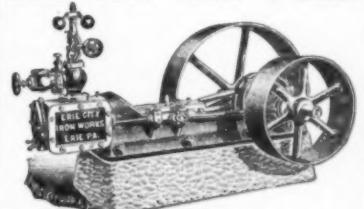
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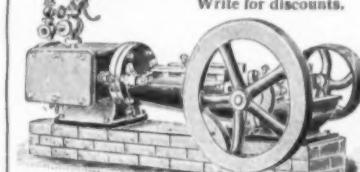
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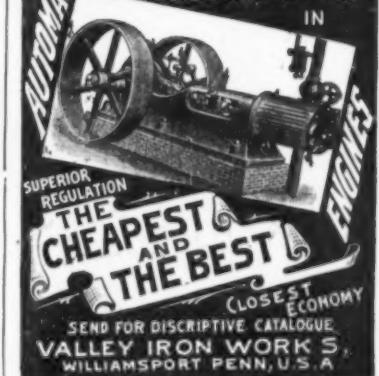
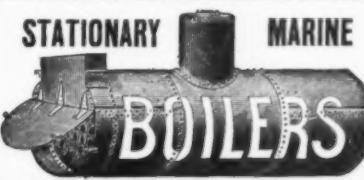
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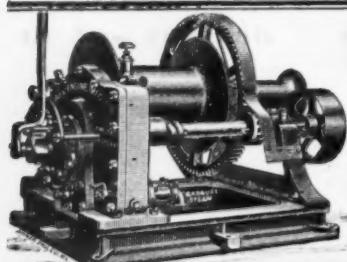
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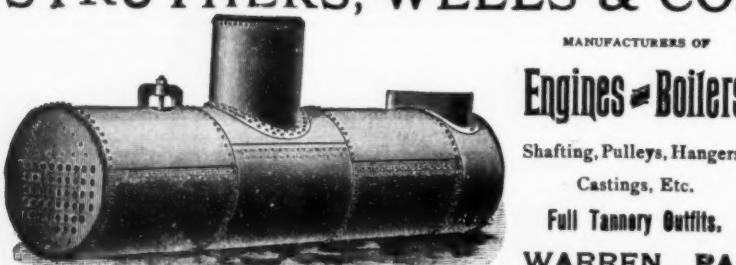
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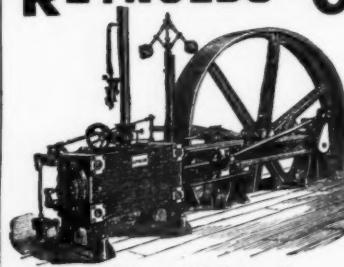
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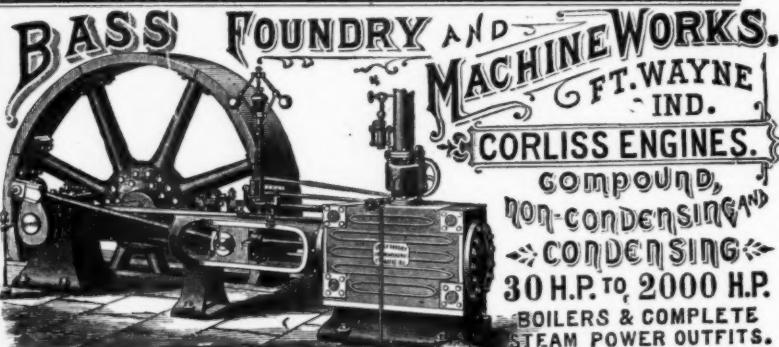
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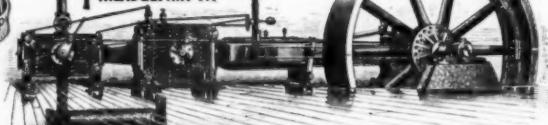
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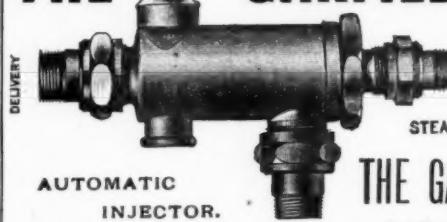
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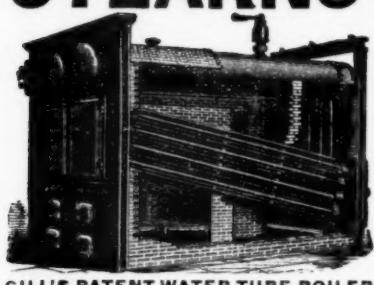
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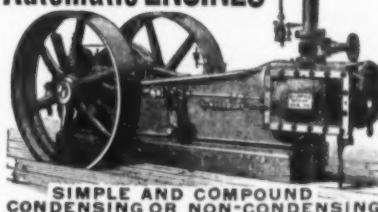


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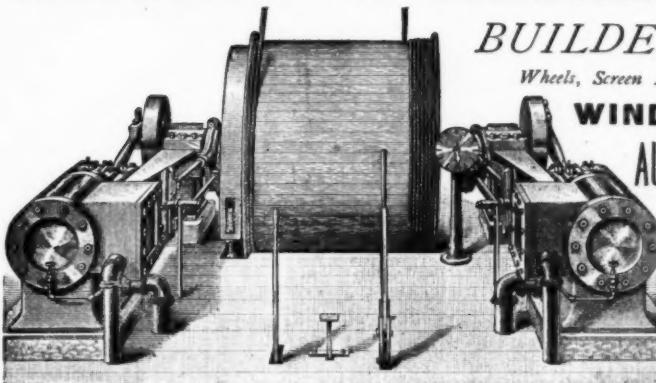
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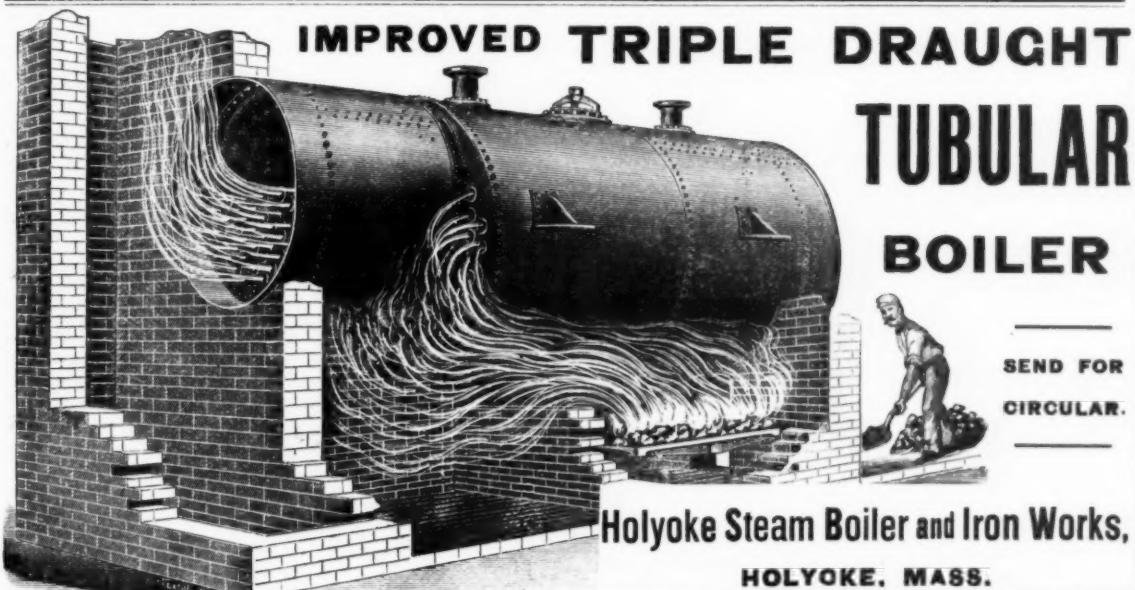
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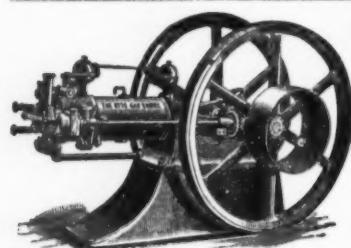
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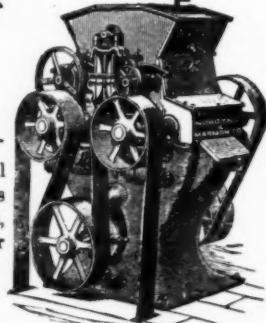
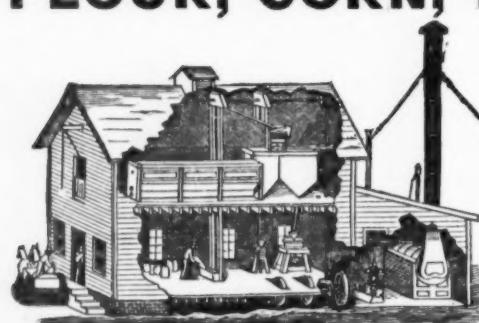
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The Hardwoods of the South.

By B. E. Fernow, Chief of the Forestry Division,
Department of Agriculture.

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I.

The hardwood lumber industry of the South has been slower to develop than that of the pines, both remaining comparatively dormant until after the war, before which the commercial enterprise of the Old South lay mainly in the line of cotton and tobacco. To-day, however, the manufacture and sale of Southern hardwood lumber is rapidly exceeding the wildest dreams of twenty years ago, a fact less evident from the increase in the number of saw mills than from the greater capital invested and the improved methods of cutting and working. An indication of the effect of the growing importance of the industry upon the prosperity of the entire section may be found in the doubling of the total assessed valuation of Arkansas property in the last ten years, due to the opening of a market for her rich hardwood forests, among the finest to be found in the country.

The main consumers of hardwoods are the furniture dealers, probably 50 per cent. of the material used in the United States being devoted to that purpose. Over 5,500 furniture factories are reported, using over \$350,000,000 worth of lumber, while the value of wood in sewing machines alone is estimated at \$1,239,400. Two cities alone, Chicago and Grand Rapids, use 50,000,000 feet annually. It seems strange to the traveler on the Mississippi river that while the South produces greater quantities of a better raw material than any other section of the country, yet the finished products are returned to the South in shiploads from Northern manufacturers whose wood supplies are themselves taken from the Southern forests.

Though there is no doubt that the hardwood resources of this section are enormous, and in many localities often still untouched, nevertheless it is probable that they have been overestimated, much of the timber even along the less accessible mountain ranges being often defective, undersized or of sparse growth, excepting in the so-called coves and along the streams. "Plenty of wood, but few serviceable saw logs," is a verdict which is frequently returned by the timber looker.

GENERAL DISTRIBUTION.

The general distribution of the hardwoods and pines has been shown in a previous map. While the distribution of the pines could be more or less differentiated, it would not be possible to do the same with the hardwoods, since most of them occupy the widest ranges of climate and soil. As a rule, they find their best development in variety, size and quality in the rich swamps and bottom lands of the Southern rivers. In less rich development they cover the greater part of the Alleghenies and the mountainous regions across the Mississippi to Eastern Texas. The oaks appear most prevalent and forest forming. The white oak is ubiquitous; the black oaks occupy highlands and lowlands. The chestnuts and hickories seem next in point of numbers and wide distribution. Only a few, like the sweet gum, black walnut, butternut and the ashes, are more

confined to special localities. Those whose importance as timber trees merits particular description are the oaks, the hickories, the chestnut, black walnut and butternut, the elms, black cherry, the tulip, poplar, magnolias, the ashes and the gums.

THE OAKS.

As a family the oaks occupy a wide range from the Great Lakes to the Gulf, with the center of best development between the northern half of the Gulf States and the country watered by the Ohio and its tributaries, the white oaks seeking the richer upland soils, where they form large forests of nearly pure growth. In the plains and low hill country the white oak, the most useful species for all purposes where strength and durability are required, is the standard; replaced by the chestnut oak in the less fertile and rocky slopes of higher elevations. The burr oak, the tree of the Northern oak openings and among the largest and most important of its kind; the overcup oak, cow oak and post oak—the last one of the commonest species of the Gulf region and west of the Mississippi, forming the prevailing species in the cross-timbers of Texas—follow the deep rich prairie loam and the broad and better-drained bottom lands in mixed growths. This group of oaks, known as white oaks, appears in the lumber market with little if any distinction. There are but few who can recognize their lumber, and their distinguishing qualities so far are only imperfectly understood, nor are they very marked. Even the distinction of the white and red oak in the lumber is only made with great difficulty, and it remains still to be seen how far, if at all for practical use, there is a difference in quality between the red oak timber from the bottoms of Arkansas, Northern Mississippi and Alabama and the white oak of those regions which produce both in perfection.

The red oak (*Q. rubra*) may be considered as the most valuable representative of the group of so-called "black oaks." Like the white oak, it flourishes both in the bottoms and on the slopes with the same difference in development and quality. It is often cut with water oak under the name "spotted oak," and is frequently used with the white variety for the wooding of machinery and dimension timber, not infrequently passing white oak inspection. It gives a softer finish for interior use and works more easily and more economically.

The oaks, as well as the pines, have become somewhat confused in the matter of names from the tendency of some varieties to cross or mix. The recognized type of red oak in Kentucky and Tennessee is *Quercus rubra*, but there are three others, Spanish, black and scarlet oaks, which are associated commercially with the true red oak, and whose manufactured lumber is as difficult to distinguish as that of the white oaks. The black or quercitron oak is equal to the red in stature and nearly so in quality, and as common on dry gravelly uplands North and South.

The water oak, a large and useful species from the wetter and often flooded bottom lands, not seldom holding undisputed possession of these level tracts in the pine region throughout the eastern Gulf States, frequently intrudes among the large shipments of square dimension oak timber. It

is used chiefly for cooperage and construction.

The poor soil, once forested with a growth of mixed pine and hardwood, covers itself frequently with various species of black oaks, among them the black-jack and the Spanish often growing together on dry uplands. The latter flourishes from New York to Florida and west to Texas, one of the commonest oaks of the middle district and Gulf region, furnishing large quantities of fuel, construction and barrel stock.

The well-known live oak grows only along the seashore of the Atlantic and Gulf coast into Mexico. The heavy strong wood was once an important ship timber, but is now used only occasionally. The bark, although rarely used, is also excellent for tanning.

There are numerous outrides concerning the impending failure of white oak supplies, due partly to the increased consumption for furniture and finishing purposes, but chiefly to the railroads, which use about 200,000,000 cubic feet of this timber for ties alone annually, and which insist not only on white oak, but also upon young growth often making but one tie to a tree, and so destroying the future value of the growing forest. Controlling rates and means of transportation, they have many wood-owners practically at their mercy.

The supplies in Arkansas are doubtless large, with large reserves in Northwestern Louisiana, Eastern Tennessee and Kentucky and West Virginia. Many of the Northern woodworking establishments import from 30 to 40 per cent. of their material, showing that oak with them is scarce. Besides home consumption, from 30,000,000 to 40,000,000 cubic feet are exported annually. Much of the best white oak remaining is said to be practically inaccessible as yet, so remote from railroads that it would be unprofitable to bring it to market.

Another important use of this family is the production of tan bark, for which the chestnut oak excels. Owing to the insistence of the railroad companies on white oak, thousands of these trees, capable of making first-class ties when stripped of their bark, were annually wasted until the

Forestry Division, in a circular, called attention to the fact that this was as good if not a better tie timber than white oak, provided proper precaution was taken to secure the seasoning of the trees, which for bark peelers must be cut in the sap. Yet many thousands of feet remain unused in the mountains because they cannot be transported. Lately the tan extract factories begin to see the value of the wood for their purposes. What is needed is a portable plant for tan extracting in which both bark and wood can be condensed into valuable material capable of bearing the transportation charges. It is estimated that the present tanning capacity of the country requires nearly 3,000,000 cords of bark of oak and hemlock, a figure that points ominously to the desirability of greater economy in the use of supplies.

HICKORIES.

The five species of timber hickories, which occur almost always as a predominant admixture with the oaks, are common alike to Northern and Southern forests, with the exception of the big shellbark,

which occurs only from Pennsylvania along the Ohio valley to Arkansas and Indian Territory. Its wood is used for the same purposes as the better known shagbark, which produces the best and toughest carriage stock, wooding for agricultural implements, tool handles, etc. The heavy drain upon this excellent timber has thoroughly culled and in some places entirely removed the once abundant stand in the region west of the Alleghanies. The mockernut, pig and bitternut are used for the same purposes as the shagbark, although perhaps of inferior quality.

The pecan, with a wide southeastern range, develops best in Arkansas and Indian Territory, choosing deep, rich soils for its home, and abounding in the swamps of Mississippi, Louisiana and Arkansas. It has been valued chiefly for its nuts, but recent tests and experiments have shown that it is also a valuable timber tree, the wood proving a fair substitute for the other hickories.

THE CHESTNUT.

The two chestnuts, the common and the chinquapin (*Castanea pumila*, Mill.), are near allies of the oak, and the former is an important feature of the Atlantic forests North and South. The best development of the chestnut doubtless occurs in the southern Alleghany region, notably in the mountains of North Carolina and Eastern Tennessee, ranging southward to Northern Alabama. It is confined to dry, rocky soils, in parts of its range forming forests of pure growth. The chinquapin becomes important only in Southern Arkansas. The light, soft, easily splitting and durable wood of the chestnut is used chiefly for cabinet work and farm purposes. Its durability and its capacity of holding spikes well would rank it as good tie timber but for a deficiency in hardness, which allows cutting by the rails. Its straight, slender and long shaft from second growth makes it desirable for telegraph poles. But for the difficulty of obtaining well-seasoned stuff, it should be a favorite as a finishing wood. Its great reproductive power makes it a most valuable species in our mismanaged woodlands of the Northeast.

BLACK WALNUT AND BUTTERNUT.

The black walnut and butternut are never found in pure growth, appearing either as scattered individuals or in small groups with other hardwoods in the warm deep soils of well-drained river bottoms, ravines and valleys. The natural range of the walnut is from Massachusetts and Southern Michigan to Florida and Texas, with its finest development in the Ohio valley and the fertile bottoms of Arkansas and Indian Territory, where still larger quantities exist. The butternut occupies much the same range, extending further northward and missing Texas on the southwest. While these species are mainly prized for their fine appearance as cabinet woods, they partake more or less of the other qualities which make the nut-bearers the most valuable family of hardwoods. The rapid diminution of supplies has not only effected a command of high prices for walnut, but has also suggested its planting for profit. The planters mostly overlook that, except for the first fifteen or twenty years, walnut is but a slow grower, and

that the high price is given not so much for the grain as for the dark color of the heart, which comes only with age, unless it can be produced by special processes."

Walnut logs for furniture are shipped from Eastern Texas to Hamburg, Germany, in large quantities, a special agent being employed to watch the hardwood trade in this country, selecting the finest grades from the best localities. Culls are not wanted. These woods, manufactured into furniture, are often returned to America to be sold at fancy prices as imported German walnut. The roots of black walnut are also used for veneering purposes, and quite a lively trade has sprung up in this material.

BLACK CHERRY.

Through the middle and eastern portions of its broad range from Canada to Florida and Eastern Texas, the black cherry, wherever it finds a rich, well drained soil, is a timber tree of large dimensions. The region where it was at least once rather abundant and of the largest size is from Southern Pennsylvania southward in the Alleghanies and westward along the Ohio valley and its tributaries to the Mississippi. It usually occurs in single trees, more or less frequently in a mixed growth. The popularity of the wood for cabinet making and interior finish has caused a scarcity of the timber, many of the otherwise untouched forests in the mountains of Tennessee and North Carolina having been thoroughly culled of cherry. It is one of the trees that seems adapted for prairie planting, and when the unfortunate black walnut craze has subsided will probably come to the front as a much more desirable plant material.

THE TULIP POPLAR.

Of the softer woods which are ranked under the lumberman's title of hardwoods, the tulip is one of the most useful as well as one of the largest trees of the Atlantic forest, extending east of the Mississippi from Vermont and the Great Lakes nearly to the Gulf coast. Along the Wabash and lower Ohio valleys and in the rich mountain forests of Western North Carolina and Tennessee, the center of its greatest development, it is still found of good size, though here, as elsewhere throughout its range, it is steadily diminishing. Along the ravines and streams it sometimes constitutes the leading species, but is nowhere found in pure growths. On one of the slopes on the upper Coal river of West Virginia the writer measured one of these giants with eleven feet diameter, its contents measuring 15,000 feet, and within sight of two others of seven feet diameter. All three had been left by the loggers because they were not prepared to handle such timber.

Tulip poplar is desirable for wood pulp, for interior finish, and, when thoroughly seasoned, for furniture, pumps, boat building and for all purposes requiring a clear, easily-worked wood. The usefulness of the timber and the evident limitations of the fast-diminishing supply are subjects of grave inquiry among wood consumers, particularly as the tree does not readily reproduce itself, and is not likely to be restored in merchantable quantities under the unfavorable conditions prevailing.

THE ASHES.

Among the six species of ashes found in the South, four, the white, the green, the red and the blue, rank as timber trees, the first being esteemed the most valuable. The first three range from the British Dominion to Florida, rarely in pure growth, preferring, as a rule, a low, rich, moist but not wet soil, but often growing in other situations. Two of the largest, the white and the red, find their greatest abundance and largest size principally along the Ohio watershed and in the deep, rich soil of some of the Alleghany slopes and ravines, though generally smaller in their extreme

southern range. The white ash is now largely replaced in the South by the less valuable and more abundant green ash, a neighbor of the water oak in saturated bottoms as well as on drier soils. The blue ash is confined to the territory east of the Alleghanies, flourishing on limestone soils. The lumber of the various ashes is exceedingly difficult to distinguish and usually passes for the same kind commercially, though the blue, the red and the green are not equal to the white. Dealers complain of the deterioration of ash lumber from some of the old sources, claiming that the best ash is now brought from Arkansas.

Ash is used chiefly in the manufacture of agricultural implements, carriages, interior finish and cabinet work, fencing, barrel hoops, baskets and fuel. The blue ash is most durable when exposed to alternate dryness and moisture, and is used principally for carriage making.

THE ELMS.

Five species of elms are at home in the South, including the cedar elm of Arkansas and Texas, and the rock elm which penetrates the South in Kentucky. The winged elm is found mostly within the southern borders on dry soils, from Virginia to the Gulf and west to Texas, producing its largest timber in Missouri. Its heavy, tough wood is valuable for hubs. The slippery and American elm are common both North and South, the former a tree of rich moist slopes and well drained borders of highland streams, while the American flourishes in inundated bottoms and along watercourses. Both species are used for much the same purposes—wheel stocks, agricultural implements, cooperage, planks, rails, fuel, etc.

THE MAPLES.

Four species of useful maples are important among Southern timber trees, the sugar, the black, the silver and the red, and, with the exception of the black, have a wide range through the forests. The sugar maple, first in rank for timber purposes, congregates in large bodies in rich clayey upland soils; in the South appearing at its best in the mountain slopes and valleys of the lower Alleghanies. This species produces the beautiful curled or bird's-eye maple, and is unsurpassed in the durability of its wood for flooring. The black sugar maple grows from Vermont through the middle district to Alabama, but is nowhere common, following along the highland streams and mingling with the similar sugar maple, from which its lumber can hardly be distinguished.

The red and silver maples are lowland trees, sometimes the dominant species in low rich bottoms, deep ravines, low lying valleys and along watercourses. They are adapted to dry soils, but rarely found to any extent in such localities, and reach their largest development in the region of the lower Ohio. The larger timber is extensively used for furniture, lumber and woodenware, but is not equal to the sugar maple.

BIRCHES, MAGNOLIAS, PALMS AND BEECHES.

The three species of birches growing in this section are not of sufficient importance to merit more than passing mention. The yellow birch, occurring in the Alleghanies, is noticeable as an occasional substitute for cherry. The black birch, the only species found in the far South, as has been said, is a large tree, haunting moist river bottoms, particularly in the Mississippi valley.

The magnolias also, brightening the forest recesses with their flowers, are not to be omitted in this list of useful timber trees. They are represented by the bull bay, conspicuous along the Mississippi bluffs; the sweet bay in wet swamps, and the cucumber tree in rich moist soils of mountain coves and ravines. The easily-worked wood of the last, which occurs in greater quantity, is well adapted for finishing lum-

ber and cabinet work, and, though at present little used, will no doubt soon find wide application in substitution for poplar. The sweet bay is desirable in turnery and for woodenware, fuel, etc.

Another truly Southern family of trees, the palms, are employed for piles, bridge building and the like in those limited tropical portions of the section whose climate is suited to its needs. The beech, from the mountains to the Mississippi bluffs, also deserves recognition for its adaptation to the manufacture of chairs, shoelasts, plane stocks, handles and mining timber.

THE GUMS.

Until within the last few years there was no more despised a tribe than that of the gums, the sweet or red gum being valued no more than the three black gums. The latter have not yet redeemed their well-earned reputation of being the toughest and most unmanageable wood of the forest. But the former, under various fancy names at first, but now without shame of its relationship, which exists in name only, claims at last an important place in our lumber supplies for fine finishing and rough boxing wood. The gums are by nature moisture-loving trees, reaching their best development in the swamps from North Carolina to the Mississippi. The black gum is a common tree North and South, often occurring in pure growths, while the cotton gum travels only from Virginia southward, often in association with bald cypress, bays, etc. The sweet gum also haunts the swamps, with the cotton gum often making up the greater part of the forest cover in the Mississippi valley lowlands, particularly abounding in the Yazoo delta. Northward, however, it seeks higher ground in a mixed growth.

It is much used abroad and in the West for furniture and finishing, figuring in the English markets, where great quantities are used under the name of satin walnut. In the Eastern States the old prejudice against gum, which esteemed it fit only for fuel, is gradually dying out; even the durability of the wood seems to have been proved by practical experience, gum trees having been reported good after twenty years' use.

The tendency of the wood to lose its reddish tint after a time, it is claimed, may be prevented by proper kiln-drying immediately after sawing. Prepared in this manner gum wood might be substituted for cherry or mahogany.

Tobacco Stems as a Fertilizer.

The use of tobacco stems as a fertilizer for orange orchards is discussed by Prof. Norman Robinson, State chemist of Florida, in a letter to the Department of Agriculture at Washington. The soils of Florida differ widely in character and require different manures. By far the greater part is highly siliceous, containing a fair proportion of basic phosphates and sometimes sufficient lime to be termed calcareous, but in nearly all cases they are greatly deficient in potash. In some respects the composition of tobacco stems admirably meets these conditions, as they contain from 4 to 9 per cent. potash, 1½ to 3 per cent. nitrogen, estimated as ammonia, and 0.69 to 1.08 per cent. phosphoric acid.

The great advantage is that they are cheap in proportion to the fertilizing elements they contain. An equivalent amount of potash, nitrogen and phosphoric acid would be worth about \$18.65 per ton in Jacksonville, and these stems are delivered for from \$12.50 to \$13.00.

Another advantage is that, owing to the porous nature of Florida soil, it is doubtful if during the rainy season the average fertilizer remains for any time where it is placed, while these tobacco stems will decompose slowly and furnish their elements as the orange tree requires them.

A Preliminary Sketch of the Phosphates of Florida.

[Abstract of a paper presented by George H. Eldridge, U. S. Geological Survey, before the American Institute of Mining Engineers at the Pittsburg meeting, June 28-30.]

The existence of phosphate of lime within the State of Florida has been known for over a decade, but until the spring of 1887 the extent and value of its deposits, possibly with one exception, were unsuspected. In that year Col. T. S. Moorehead examined the gravels of Peace river, and, recognizing their importance, established the pebble phosphate industry, making his first shipment in May, 1888, to the Scott Manufacturing Co., of Atlanta, Ga.

A year later the hard rock phosphate was discovered near the present town of Dunnellon, and to this, more than any other cause, is due the remarkable development of the present great industry in Florida. From Dunnellon as a center, prospecting rapidly extended in all directions, until at the present day important mines have been opened over a well-defined tract more than 200 miles long and about six miles wide. This tract lies parallel with the Gulf coast, at an average distance from it of about twenty miles, and extends from the vicinity of Richland, in Pasco county, northward and westward nearly to the Apalachicola river.

The region next attracting attention lay to the south of the hard rock area, in the vicinity of Bartow, in Polk county. This is the now important field of land pebble phosphate and was prospected in 1890.

At the present day phosphates of one description or another have been recognized from the Apalachicola river east and south to nearly fifty miles south of the Caloosahatchie river. In all these districts mining is conducted on a large scale, and shipments constitute a heavy item of freight on the various railroads. Not only is the raw material consumed in large quantities in the United States, but heavy shipments are made to various ports in Europe.

The geological formations of Florida include strata of Eocene, Miocene, Pliocene, post Pliocene and Recent periods. The rocks of the Eocene formation are chiefly white, gray or yellowish limestones of porous, rotten or marly texture and highly fossiliferous. Their permeability to water renders them soft and easily subject to disintegration, although exposed surfaces become hardened through atmospheric agencies. Along the median portion of the Eocene area, with a north and south trend, lie the heavy deposits of hard rock phosphates.

The Miocene formation embraces two clearly defined and broad divisions—an older and a younger. The former only is involved in the geology of the phosphates. Like the Eocene, it is essentially a limestone formation, but with the difference that it is distinctly bedded and comprises rocks of a more compact nature, of greater hardness and less subject to disintegration. The individual strata, about four or five feet thick, are frequently separated by softer zones of approximately the same material, but more porous and often marly in appearance. The Miocene phosphate area is confined to the northern and western part of the State. The formation directly overlies the Eocene, and at several localities in Northern Florida is itself overlain by the red sands and clays of the Lafayette series.

The several distinct phases of the Pliocene formation exhibited in Southern Florida include marls, clays and limestones and a unique phosphate deposit locally known as pebble rock. The latter possesses special interest as being directly the source of a most important class of phosphate.

Florida contains four distinct and widely

different classes of commercial phosphate, each having a peculiar genesis, a peculiar form of deposit and chemical and physical properties that readily distinguish it from any of the others. According to their mode of occurrence or some predominant characteristic these classes have come to be known as "hard rock" phosphate, "soft" phosphate, "land pebble" or "matrix rock" and "river pebble." Except the soft phosphate they underlie distinct regions, but a slight commingling of the material of one class with that of another is frequently observed.

HARD ROCK PHOSPHATE.

The type of this class may be regarded as a hard, massive, close-textured, homogeneous, light gray phosphate, showing irregular cavities, usually lined with mammillary incrustations of phosphate of lime. The general appearance is that of a limestone deposited by precipitation from thermal springs. After the deposition of this material upon the sides and floors of cavities, the waters have receded and the material has dried and hardened to rock consistency. The contents of phosphoric anhydride (P_2O_5) in the type rock run slightly above or below 36.65 per cent.

SOFT PHOSPHATES.

The name "soft phosphate" has been arbitrarily given to anything phosphatic that is not distinctly hard rock, including the material resulting from disintegration of hard rock and also the highly phosphatic clays and sands. There are several grades of soft phosphate, the purest of which is the homogeneous product of alteration from hard rock. The quality of the other grades varies with the amount of sand and clay accompanying them. The wide distribution of this and the only partly successful attempts to work it into commercial phosphates, forms one of the most serious problems of the economic working of hard-rock deposits.

The phosphoric anhydride (P_2O_5) rarely averages 22.90 per cent. of the mass.

LAND PEBBLE PHOSPHATE.

The pebbles constituting this class vary in size and shape but are normally of uniform texture, color and composition. They are white with a smooth exterior, but become dark gray when subjected to percolation or stream water. They range in size from a minute grain to that of an English walnut. The phosphoric anhydride (P_2O_5) averages about 32.06 per cent.

RIVER PEBBLE PHOSPHATE.

The designation "river pebble" is based on the usual manner of occurrence of this class of phosphate. The type is found not only in the rivers of to-day, but also in ancient channels, coastal sands and hummock lands. Along the Peace river it occurs in bars in the present and ancient channel, into which it has been washed from the bordering beds of marl and clay and the land pebble deposits which underlie the water shed. The pebbles are blue, black or gray outside, grayish or yellow-brown inside and range up to an inch in diameter. The pebbles of Black creek, which enters the St. Johns below Jacksonville, resemble those of Peace river, but are lighter in color.

The Peace river pebbles average in phosphoric anhydride (P_2O_5) about 28.40 per cent.; the Black creek, 20.61 per cent.

ORIGIN OF THE PHOSPHATES.

The origin of phosphate of lime in sedimentary rocks is unknown. Its presence in sea-water, its broad distribution in both plant and animal life, its occurrence in rocks of all ages, and its special presence in Cretaceous and Tertiary limestones are facts long recognized. Its occurrence in recent times in the form of leached and soluble guanos and the phosphatization of underlying strata have also been noted. Its presence in sea-water is well established, and Southern waters, swamps and

lands give evidence of the presence in them of abundant life, secreting phosphate of lime and afterward returning it to the beds on which this life rests.

GENESIS OF THE HARD ROCK AND SOFT PHOSPHATE.

The development of these deposits is divisible into three periods: First, that in which the primary rock was formed; second, that of secondary deposition in the cavities of the primary rock; third, that in which the deposits thus formed were broken up and the resulting fragments and comminuted material were redeposited as they now occur.

The first of these stages probably began not later than the close of the older Miocene, and within the Eocene area it may have begun much earlier. Whether the primary phosphate resulted from a heavy deposit of soluble guano or from the concentration of phosphate of lime, already widely and uniformly distributed, or from both, is a difficult question. In any event, the evidence indicates the effect of the percolation of surface waters, highly charged with carbonic and earth acids, and thus enabled to carry down into the mass of limestone dissolved phosphate of lime to be redeposited under conditions favorable to its separation.

The thickness of the zone of phosphatization in the Eocene area is unknown, but it is doubtful if it was over twenty feet. In the Miocene area the depth has been proved from the phosphates *in situ* to have been between six and twelve feet.

Of the deposits of secondary origin in the interstices of the primary rock it is evident that many were due to actual sedimentation. It is possible that others, particularly the homogeneous white variety, may have been due to precipitation from water still percolating the phosphate first formed.

The deposits of phosphates thus formed in the Eocene and Miocene times of the Florida peninsula were remarkably free from iron and alumina in comparison with many of those in the West Indies. The original percentage may have been somewhat reduced in the process of rock formation, but at no time could there have been so much as found, for instance, in the Navassa rocks.

The third period in the genesis of the hard rock deposits includes the destruction of the original beds and piling up the boulders as found to-day. This may have occurred during the last submergence of the peninsula, when the limestone underlying the phosphatic zone was dissolved or broken away and the overlying beds would be broken, washed and rolled into rounded fragments and their interstices filled with sand, clay and the soft phosphate naturally held in suspension in the waters.

GENESIS OF THE LAND PEBBLE PHOSPHATE.

The resemblances in texture, color and general appearances which the pebbles of this deposit occasionally bear to the hard rock type are in a measure suggestive of their derivation from a limestone of Pliocene times or possibly older Miocene. On the other hand, the white color, earthy appearance, lower percentage of phosphate of lime, softness and preservation of included fossils, suggest their origin from a marl or earthy friable limestone.

The deposits of pebble, plate rock and soft phosphates east of the Eocene area are regarded as nearly equivalent in age to the land pebble beds of South Florida. The growth of the peninsula since Eocene times has been chiefly westward; hence it is on the eastern side of the rock phosphate belt that the sediments derived from it and material carried in solution have been deposited in the hollows of the older limestone in well-developed beds of individual character.

GENESIS OF THE RIVER PEBBLE PHOSPHATE.

The origin of the river pebble itself was

doubtless somewhat similar to that of the land pebble, and the subsequent leaching out of the carbonate, which set nodules and casts free, and, according to the locality in which it took place, permitted their accumulation as a superficial layer just beneath the soil or as bars in the rivers.

CHEMICAL CONSTITUENTS OF THE PHOSPHATES.

The contents of the hard rock in P_2O_5 range within a few per cent. on either side of 36.65, corresponding in commercial language to 80 per cent. of tri calcic phosphate ($Ca_3P_2O_9$). The percentage of P_2O_5 is generally in inverse ratio to the amount of insoluble matter, chiefly sand, which ranges from 8.78 to 0.49 per cent.

The combinations into which P_2O_5 enters in the phosphates of Florida are, in the order of preference, those of lime, alumina and iron. Where the type-rock of the class is approached its combination with alumina and iron is at a minimum, but at the other extreme, where either sand or clay forms a conspicuous part, a considerable percentage of P_2O_5 is combined with the iron and alumina.

The fluorine, which universally occurs as a constituent of Florida phosphates, is of both scientific and practical importance, but the investigations concerning it are yet in their incipiency and will not bear a statement as to the geological or economic bearing of the mineral.

The deteriorating constituents of all phosphates are chiefly the insoluble matters, the carbonate of lime and the oxides of iron and alumina. Of these the first in reasonable amount is of least importance, since its effect is chiefly mechanical. The second has in addition a chemical disability in that it takes up a certain amount of sulphuric acid in the manufacture of superphosphates. The objections to the last are many, as they tend to cause an acid phosphate to revert with a direct loss of P_2O_5 , and render the product moist and sticky and almost impossible to dry. Phosphate buyers, therefore, usually limit the contents in $Al_2(Fe_2)O_5$ to 4 per cent., deducting for each unit of these constituents above this percentage the equivalent in phosphate of lime which might become available from the P_2O_5 taken up by the $Fe_2(Al_2)O_5$.

CHEMICAL ANALYSES OF FLORIDA PHOSPHATES.

	Typical gray rock phosphate	Fos'l phosphate with sand cavit's	Land pebble phosph. washed.	River pebble phosph. dried.	Typical soft clay phosphates
Loss (H_2O) at 105°.....	1.05	.61	.56	.44	
Loss (H_2O) at red heat.....	2.48	3.15	4.90	4.76	
CO_2	2.28	2.19	3.99	3.31	
Fl.	2.40	2.78	3.46	3.58	
Insoluble residue.....	1.7	5.85	4.34	10.23	4.24
$Al_2(Fe_2)O_5$	3.27	5.13	....	....	7.85
Al_2O_3	3.88	2.83	2.01	7.01	
Fe_2O_3.....	.56	1.35	1.05	1.46	
CaO	46.14	47.95	42.75	44.05	
MgO.....	....	.21	.44	....
P_2O_5	35.50	33.90	34.72	36.30	35.19

$P_2O_5 \times 2.183 = Ca_3P_2O_9$

Suitability of Southern Waters for Bleachery Purposes.

By Herbert G. McKerrow.

Natural conditions have so great a bearing upon the successful instigation and conduct of almost all manufacturing enterprises that in looking over the possibilities of new undertakings our first glance is almost instinctively at the face of nature. According to the smile or the frown there may be read the approval or disapproval which may mean so much, and which may have such a fateful bearing upon the commercial prosperity of almost any undertaking that it would appear that man is not so much the architect of his fate as he fondly supposes. No energy, no degree of perseverance can wrest from an unwilling, ungracious landscape or climate the cooperation without which the most ingeniously contrived human facilities are futile. This, then, rises forcibly for consideration when the institution of bleacheries, finishing and dye works in the Southern States

is considered—what assistance may be expected from the natural environments of this country, what conditions may be taken advantage of and what must be avoided.

As far as the climate is concerned, it may be broadly asserted that here figures forth an advantage that the South possesses over the East that is by no means inconsiderable. The prevailing almost unvarying warmth, together with a quite sufficient degree of humidity and the natural comparative tepefaction of the water will in all probability tend to expedite the operation of bleaching in no small degree. It is not by any means a rare circumstance that bleach-works in New Hampshire, Massachusetts and Rhode Island are seriously hampered in their operations by the severity of the weather, the coldness and dryness of the atmosphere during several months of the year.

To what degree this climatic advantage might exist; to what extent it might prove to be a means of a commercial saving in the matter of shortening the process could only be known after practical tests, but it is possible that the establishment of bleacheries in the Southern States, the farthest point south in the world where this is likely to be done to any great extent, might offer a revelation of unsuspected possibilities, the extent and importance of which may not at once and now be seen.

Other physiographical attributes there are, however, in connection with this a purely chemical industry which have an even larger bearing. Of these the one that instinctively presents itself for first consideration, the one, indeed, which has always been offered as constituting the great obstacle to the profitable undertaking of these matters below the State of Delaware, is the condition of the water supply. As far as bleaching alone is concerned, this is a matter which may very easily, and, in fact, generally is, very greatly overestimated. Up to the completion of that part of the bleaching process which is termed "scouring" it is not of vital importance what kind of water is used; subsequent to that the only requisite is that it should be fairly clean. The quantity of water obtainable is of far greater importance than the quality, and while purity, if obtainable, is a matter for congratulation, where it becomes

a choice between the two, the plentiful supply ought undoubtedly to have a greater weight on a decision regarding a proposed locality than the consideration of its chemical character. With the water supply for the operations for dyeing and printing, however, these conditions are changed. Here both in the preparatory bleaching for these treatments, and in the treatments themselves, the quality of the water becomes a matter of primal importance.

The greater thoroughness with which the goods must be "bottomed" in the bleaching operation; the absolute annihilation of the natural impurities of the fibre itself, not merely a loosening or solution of extraneous fatty and coloring matter which may have been absorbed in the processes of manufacture, which is necessary to enable the cloth to exhibit an affinity for the various mordants to be subsequently used, give this matter an importance which it does not possess when the final purpose is merely to prepare the fabric for the whole market. In the operations of dyeing and

MANUFACTURERS' RECORD.

printing the inconveniences and causes of added expense, which may find their origin in the impurity of the water, are many, and not only failures in formulae, but the disabling of machinery, may not infrequently result from the non-appreciation of this fact. Although these more intricate requirements will in all probability not come prominently forward in connection with Southern industries for many years, not, indeed, until the cotton mills of Georgia and South Carolina are engaged in the manufacture of print cloths and cambrics, it will not in all probability be found that the South is laboring under much disadvantage in this respect.

At the first glance the river water in the manufacturing States in this region appears to be disappointing; there is a great and general turbidity in its appearance that would appear to unfit it for use for manufacturing purposes. While this may actually be so in a few isolated districts where the mineral deposits are great, and where the pollution of the water is derived largely from the banks between which it has flowed, the generality of river waters in the South will be found to be fairly free from organic impurities, and what matter there is as pollution is mechanically suspended, coarsely and heavily, and therefore very easily gotten rid of by filtration. In almost every case an efficient system of settling banks would render even the river water there of a quality sufficiently satisfactory for bleaching, and in not a few instances for the most complicated and exacting requirements of dyeing and printing.

But, apart from this abundant supply of river water, the South is fortunate in having in many quarters still another and much less impeachable avenue of usefulness in this respect. When the waters of the Savannah, the Chattahoochee and the James river cease to be in discussion, recourse can be had to the unrivaled advantages to be obtained in the matter of spring water, and of lakes fed by springs and surface drainage. What one is there among the eleven cotton manufacturing States that is not rich in this respect, and what district is there in which cotton manufacturing is or is likely to become an important factor which either does not contain or is not within measurable distance of supplies of spring water, which, in comparative freedom from iron and from the salts of magnesia and lime, offer facilities for bleaching and dyeing which could hardly be surpassed? In many localities, too, such as in the neighborhood of Augusta, Ga., Aiken, S. C., Somerville, Ga., Chattanooga, Tenn., and Huntsville, Ala., the amplitude of the supply of this spring water is striking, in many cases offering not merely a plentiful supply for chemical purposes, but an accumulation sufficiently large for power purposes also.

It is manifestly not within the scope of convenient treatment to canvass separately and individually the possessions of each State in this matter of water supply, but a selection of tests made of samples taken from different parts of South Carolina and Georgia may prove interesting as showing the singular purity of the water obtainable in those two States, where, as was pointed out in my last article, the accumulation of cotton manufacturing interests already seems to have made the establishment of bleacheries a matter of assured success in a commercial sense.

Of the subjoined tests, Nos. 1 and 5 were obtained in Georgia, the first within a few miles of the city of Augusta, the other from the neighborhood of Columbus; Nos. 2, 3 and 4 came from the State of South Carolina; Nos. 3 and 4 from within five miles of Aiken and No. 2 from the neighborhood of Greenville. It may be said in passing that the samples No. 5 and No. 2 were both obtained under the most unfavorable circumstances, the one being ob-

tained during a heavy shower and the other on the day after a rainstorm of exceptional severity:

	GRAINS PER GALLON.	
	Total solids.	Iron-sesqui- oxide.
No. 1	3.052	0.032
No. 2	2.800	0.011
No. 3	3.382	0.035
No. 4	4.549	0.064
No. 5	4.957	0.017

Bleaching powder at 35 per cent. available chlorine consumed by the water:

	GRAINS PER GALLON.
No. 1	7.05
No. 2	5.30
No. 3	3.55
No. 4	7.69
No. 5	10.61

The above tables would seem to emphatically demonstrate not only the purity of the spring water in the above mentioned districts, but its particular suitability for bleaching purposes also. The two samples from the neighborhood of Aiken came from a remarkable supply. From two large ponds, supplied by springs and by surface drainage, there flow three streams (from which the samples were taken), any one of which is fully equal to the demands of almost any bleachery, possessing in addition an undeveloped power of about 400 horse-power. There need be little apprehension, therefore, with regard to either the quality or the quantity of the water supply of the South for the purpose of bleacheries and dye-works. Nature seems to have provided for such necessities in a way that is exceptionally comprehensive.

Direct Foreign Trade from Southern Ports.

A great movement, based upon Southern needs, is in active progress in the South. It has been started in Georgia, and looks to Southern direct trade with foreign countries. Business men in the South are looking to every practical means of relieving the depression that prevails all over this section, a depression affecting commerce, railroads, manufacturing and the farmers.

Col. Thomas P. Stovall, who has been for fifteen years engaged in international trade projects successfully, and Col. I. W. Avery, a journalist of Georgia for twenty-five years and at the head of leading dailies, are working up the movement. The press, the public men, the city councils and trade boards and the farmers are all backing it.

Governor Northen has given it official sanction, and Senator Brown, Generals Lawton and Jackson, and other broad-minded and public-spirited leaders have endorsed it. The city councils and chambers of commerce of Atlanta, Columbus and Griffin and other cities, and the Georgia State Convention have commended the project in strong terms.

Colonel Avery has been discussing the subject in a series of articles that have appeared simultaneously in the daily press, and that have evoked universal and enthusiastic endorsement. The attitude of the various public bodies is indicated by their expressions on the subject, a few of which are given below.

GEORGIA STATE CONVENTION.

Resolved, That the movement under Thomas P. Stovall and Col. I. W. Avery to get direct trade between the South and foreign countries has our full sanction and earnest hope for its success, and we urge all Southern interests to work for and help it. That it is needed to give more business to our railroads, markets and money to our farmers, volume to our trade, and financial relief and commercial independence to the South.

ATLANTA CHAMBER OF COMMERCE.

Resolved, That the condition of the country renders it a peculiarly fitting time to start this movement now, and that with an earnest union of all Southern interests and energies the effort ought to succeed.

Resolved, That we urge the citizens, the railroads, the factories, the business men, the city corporations and the trade bodies to co-operate in pressing this important project to success.

SAVANNAH BOARD OF TRADE.

Resolved, That the movement to secure direct trade from the South with foreign countries now being inaugurated affords especial gratification in the prospect it opens for an enlargement of the commerce, more abundant and cheaper money and increased business for railroads and other industrial corporations in the Southern States.

Resolved, That one signal benefit of the movement will be to more widely acquaint the world with the South's wonderful resources and capabilities.

COLUMBUS BOARD OF TRADE.

Whereas, it is necessary that there be united action in this State if it ever throws off the yoke of bondage to a great money center, and creates a money center in its own borders, and makes its own exchange strong and available; and, whereas, no means to this end can so well be employed as direct trade with the West Indies, Mexico, South America, Africa and Europe,

Resolved, That the Board of Trade of Columbus, Ga., takes this method to express its sympathy for and approval of any and every effort that may be made to open up this direct trade traffic, and that it will give every assistance in its power and use all its influence to find cargoes for outgoing and returning vessels from Georgia ports.

The South has, from Providence, great ports and deep harbors connected by shorter lines, usable all the year round, with the Gulf and the West. Nature has lavishly favored this section and equipped her for trade supremacy, giving her the sole production of the world's best staple, endless timber for her own merchant marine, and inexhaustible iron and coal and other minerals for manufactures.

Direct trade will afford new sources of money, new markets for our products of every kind, less expense of commerce, fewer middlemen to lessen profit, the transfer of business centers here, multiplied financial avenues, more good immigration, more and cheaper capital, more trade connections, larger competition of buyers for our goods and productions, better and more sources from which to buy the goods we want, increase of industries, extended trade relations, relief to our farmers, greater mercantile facilities, business friendships, closer linking of home and foreign interests, the vast Pacific coast trade, business enlargement, increased accretions of revenue for our railways, and a wider and better foreign acquaintance with our resources and the fine attractions of our country.

The amazing substantial increase of every interest in the South in the last ten years justifies this effort for commercial power. This Southern growth has been: Of property, 70 per cent.; railroad mileage, 115 per cent.; cotton mills growth, 400 per cent.; pig iron production, 500 per cent.; wood industries and value of manufactures, 130 per cent.; coal mined, 600 per cent.; minerals mined, 900 per cent.; corn crop, one year, 25 per cent.; cotton crop, one year, 20 per cent.; railroad construction, one year, half of the whole country; exports, one year, 40 per cent., against 14 per cent. for the United States; productive investments, one year, 40 per cent., and decrease of debt, ten years, 50 per cent.

In 1890 in 105 new national bank organized in the United States, with \$10,985,000 capital, fifty-five were established in the South, with \$5,310,000 capital, nearly one-half.

The new manufacturing enterprises established in the South grew as follows: 1860, 1,575; 1867, 3,430; 1888, 3,618; 1889, 5,135.

The net increase of earnings on forty-six Southern railroads of 1890 over 1890 was \$4,956,760.

These marvelous figures tell a wonderful tale of Southern capability and Southern achievement, and base an irresistible demand for the South to have every chance and every agency for trade, power, growth and wealth, as well as for the country's good as in her own right.

Four-fifths of her material expansion is directly in the line of using direct trade. The exports are here and growing and demand an outlet and more markets.

The English steamship companies are willing to put on regular lines of the best passenger and freight steamers to the South and furnish the money to do the business if the South will give the freight to make it pay.

The railroads and merchants are all ready to unite in the effort. The Central Railroad of Georgia gave a strong endorsement and pledge of hearty co-operation. Mr. Edmund Washburn, the traffic manager of the Kansas, Memphis & Birmingham Railroad, thus writes to Colonels Stovall and Avery:

That your project is feasible there can be no question, and we are glad it is being pushed so vigorously. Our relations with the South are very intimate, a portion of our vast system being wholly within the Southern States, and whatever tends to develop business in and through the South necessarily is a benefit to these roads, and we will gladly join our Eastern connections in any efforts they may make to carry out your project. Of course the roads reaching the seaboard must take the initiative in this matter, but we will co-operate with them to the extent of our ability.

Could there be a stronger practical encouragement than this? And with the concentration of Southern and Western efforts, can the project possibly fail? In the fall, after the summer has been used to arrange the line, the cotton crop comes to furnish freight the entire winter, the cotton antedated and reinforced by the great volumes of corn, wheat, meat and innumerable other products from the West. And next spring and summer are to witness the inundation of foreign visitors from Europe to our World's Exposition at Chicago, able to come or go by the North or South and return the other way and see both countries.

But the most valuable fact, perhaps, of all the encouragement is the power already given by the great Southern Railway and Steamship Association to the commissioner, Col. E. B. Stahlman, to make low railroad freights from the West to the South Atlantic ports, thus securing equality of cost of transportation with other lines, with the great advantage of nearer distance and quicker time.

The South's main part is to give cargoes. Her cotton, lumber, rice, naval stores, fruit, vegetables, cotton yarns and goods, etc., and Western grain, meat, etc., that want a rival Southern route to Europe, can supply them. The farmers, merchants and railroads must pull together.

The cotton firm of S. M. Inman & Co., of Atlanta, Ga., does a business of twenty millions of dollars and ships hundreds of thousands of bales to Europe direct, mainly from Houston, Texas, with all the disadvantage of using tramp ships, instead of regular lines of steamers sailing at fixed intervals all the year round, as are needed for proper and best direct trade. These spasmodic shipments show the matter both feasible and necessary. And a South Atlantic port will be better to start from.

There is no difficulty about outgoing freights. This can easily be managed, the largest half of the matter. The next question is freights to the South, which will make the steamers pay both ways.

The total imports of the United States for 1890 were \$838,000,000, while the average annual value of imports from 1881 to 1890 was \$702,000,000, showing a remarkable increase, due to reciprocity very largely.

Of this \$838,000,000 the South imported only about \$52,000,000 direct, or one-sixteenth, while she uses one-eighth, or twice as much. The direct importation or of what she uses, instead of getting it through New York, which imports \$540,000,000, or near two-thirds of the whole, would support a line. And if the West would use our shorter and cheaper route, as she will when she sees it to her interest, the matter would be clinched.

New York imports of dutiable foreign products, cloths and clothing, \$11,000,000; wools, \$17,000,000; wines, \$7,000,000;

sugar, \$27,000,000; tobacco, \$10,000,000; silks, \$22,000,000; gloves, \$2,000,000; jewelry, \$12,000,000; tin, \$15,000,000; glass, \$5,000,000; fruit and meats, \$8,000,000; flax, jute, etc., \$20,000,000; dried fish, \$2,000,000; feathers, etc., \$2,000,000; threads, laces, etc., \$20,000,000; chemicals, \$11,000,000; buttons and brushes, \$4,000,000, and books, \$3,000,000.

New York imports free of duty: Tin, \$7,000,000; jute butts, etc., \$7,000,000; tea, \$10,000,000; sugar, \$19,000,000; spices, \$2,500,000; raw silk, \$8,000,000; matting, \$2,000,000; rubber, \$16,000,000; hides and furs, \$13,000,000; fruits, etc., \$5,500,000; chemicals and drugs, \$18,000,000.

With a regular line the South could import direct her share of the above articles, all of which she uses.

In this connection New York used to have a great advantage by the undervaluation of cargoes under the law. But the customs administrative law has rectified that evil, which enabled large New York importers to undersell smaller importers at other points.

There has been a steady growth of exports, in which the South should share with direct trade. The export increase has been in the line of Southern production, breadstuffs, raw and manufactured cotton, copper, steel and iron.

In 1891 our exports were \$970,000,000 and imports \$828,000,000, giving us \$142,000,000 balance of trade. Our whole foreign commerce that year was \$1,798,000,000, or \$117,000,000 over 1890, and \$30,000,000 over the average for ten years.

Another good fact is that imports free of duty have increased from 34 per cent. in 1890 to 50 per cent. in 1891, while dutiable imports have decreased from 65 per cent. in 1890 to 39 per cent. in 1891, and now the free imports are the larger and steadily growing larger.

Let the South, with direct trade, get ready to benefit by this increase of free imports and enlargement of exports.

Colonel Stovall is to-day getting steadily foreign immigrants at his settlement below Macon, Ga., Adams' Park. Mr. Boyd, of the great Atlanta furniture factory of Boyd & Baxter, wishes to import his German plate glass direct. Judge J. D. Cunningham, the largest peach-raiser in the South, has refrigerators ready and will ship carriages to Europe the day Southern direct line is running. The early vegetable men of Georgia and Florida are eager to begin shipment to England. Florida is already negotiating for sending oranges to the continent. Mr. Chamberlin, of Atlanta, imports carpets and silks, and Elsas, May & Co., jute, etc., and others jewelry, hardware, etc.

With union of effort we can load ships coming this way.

Savannah, Ga., so far presents the strongest inducements to be selected as the South Atlantic port where this direct trade should come.

Savannah is the only fresh-water port south of Philadelphia on the Atlantic, as vessels in navigating salt water get barnacles and sea weed on their bottoms, and fresh water destroys them, the saving of expense and time in dockage is an advantage.

Savannah is the leading coast terminal of the railway systems of the South. The Central Railway's 3,000 miles of track reach into Georgia, South Carolina, Alabama and Tennessee, connect through with great Western systems, and open up to Savannah the vast producing centers beyond the Mississippi, developing coal, iron and marble of Georgia, Tennessee and Alabama, and covering a quarter of the Southern States with a net-work of railways.

The Plant system, with 2,000 miles, pierce Georgia, Florida and Carolina and Alabama, and, connecting with Mississippi and Louisiana, bring thousands of bales of

cotton, naval stores, phosphates and fruits and vegetables to Savannah for shipment. The Plant system connects by steamship with the West Indies.

The Southbound Railway is a new north and west line to Columbia, S. C. The Macon & Atlantic Railway, from Macon to Savannah; the Middle Georgia & Atlantic Railway, from Atlanta to Savannah, and the Savannah, Americus & Montgomery, from Montgomery, Ala., to Savannah, all air lines, will open new fields to the Forest City.

The suburban and street railways of Savannah have seventy miles of feeding lines.

Savannah is near to Memphis 672 miles; New York, 1,159; Savannah is 807 miles from Little Rock, and New York is 1,294; Savannah is 1,066 miles from Waco, Tex., and New York is 1,707; Savannah is 1,187 miles from Kansas City, and New York is 1,492; Savannah is 889 miles from St. Louis, and New York is 1,018; Savannah is 1,303 miles from Omaha, and New York is 1,383, and Savannah is as near Cincinnati as New York.

Savannah is thus nearer than New York by rail to the great Western States; to Memphis, 542 miles; Kansas City, 183; St. Louis, 162; Salt Lake City, 120; San Francisco, 101; Portland, 87; Nashville, 469; Chattanooga, 492; Birmingham, 621; Montgomery, 691, and Atlanta, 581 miles, and freight can be cheaper and the time quicker.

Savannah is as near to Havana as to Pensacola.

Savannah in 1872 exported 458,435 bales of cotton, and to August 24, 1891, 1,132,625 bales. Her naval stores in 1880, first year, were 46,321 barrels of turpentine and 231,442 barrels of rosin, and in 1890, 182,085 barrels of turpentine and 726,621 barrels of rosin. Exports and imports in 1890 were \$150,000,000, an increase in one year of \$38,000,000.

In fifteen years Savannah's annual exports of timber and lumber have grown from \$500,000 to \$1,400,000; fruit and vegetables from \$500,000 to \$2,500,000; pig iron from \$25,000 to \$1,500,000; cotton-seed-oil in three years to \$850,000; commercial fertilizers, 220,000 tons, 50,000 tons made in Savannah; real estate doubled.

Savannah is the second cotton port of America, and the second in receipts and the first naval stores port of the world.

For the eleven months ending May 30, 1892, the Ocean Steamship Co. carried North 1,043,243 packages of oranges, 225,713 packages of vegetables, 1,128,843 melons and 80,000 boxes of fruit. With direct trade Savannah could have shipped as much to Europe.

The making of Europe an accessible market for fruits and vegetables would stimulate these industries and bringers of money to Georgia beyond calculation.

Jay Gould said, "Savannah's terminal facilities are worth millions of dollars." She has five miles of river frontage, with magnificent wharves and accommodations for an immense sea tonnage. In 1890 1,384 vessels, besides numbers of coast-wise ships, with 1,772,417 tons, entered Savannah. Over 100 foreign steamships and 200 sailing vessels came in.

The Savannah bar channel has a depth of twenty-six feet at mean high tide, and from the city to the sea twenty-two and five-tenths feet depth mean high water.

Savannah certainly presents strong claims for the privilege of being a terminal point for direct trade from foreign countries.

A gentleman just visiting the North says he found no spirit to oppose Southern direct trade, but sympathy with it, and the belief that the growth of the South's commercial power would benefit the whole land.

The North is awakening to the South's capabilities. Senator Brice voices the

universal view of the North in these strong and true words:

"The South is the great coming field for development, and I believe it is the best investment field for to-day. The West is filled up now, and from now on the tide of immigration will be Southward. The South is full of resources. It has vast areas of good land, and its mineral possibilities are inconceivable. Yes, I look for an immense development all over the South."

Is it not an irresistible need that we now take direct trade in our own hands to control this sure tide of immigration and trade and get its full benefit?

Interoceanic Short Cut.

Rear Admiral Daniel Ammen writes to the *Baltimore Sun* about the recent St. Louis Nicaraguan Canal convention as follows:

"Little has appeared in newspapers in relation to the proceedings of this convention; they will soon be published in pamphlet, and will doubtless be read with interest by all who appreciate the importance of the subject. A gentlemen in public life, for whom I have great regard, insisted upon my attending the convention, which I did. It was composed of the ablest men from the Pacific coast and the inland States, who understood the question fully and were very much in earnest. All of the Southwestern and inland States and the Virginias were largely and ably represented. With the exception of Pennsylvania and New York there were few from the States east of the mountains, perhaps from the almost universally accepted belief of the advantage, indeed the necessity, of our making the canal, and no doubt of the fact.

"In May, 1879, the so-called 'Paris Canal Congress' was held. Civil Engineer Menocal and myself attended under instructions published some months later by the State Department, titled 'Instructions to Rear-Admiral Ammen,' etc. A few days ago one of our distinguished Senators told me that he had just read that pamphlet, and was surprised at the accuracy of our statements, as shown by the final results ten years later. Had our ideas presented to the 'congress' been accepted as facts, \$250,000,000 and tens of thousands of men would not have been buried at Panama. Probably a French canal would have been made at less than half the waste at Panama, and dividends even more munificent than those paid by the Suez Canal would have been the result. Our coasting trade would be paying heavy tolls, and if complained of we would be politely informed that we were not forced to go through the canal. Cape Horn was still open to us without tolls, and our overland railroads also, some of whose 'magnates' now tell us that 'a canal will not pay, they are opposed to it, and it will never be built.' This senseless opposition, in order to be able to maintain rates as high as traffic can possibly bear, instead of enlarging their traffic through a liberal policy, goads the people of the Pacific States almost to madness. It would be resisted by force of arms were it a government imposition. The newspapers say these 'magnates' pay the Pacific Mail Steamship Co. \$70,000 per month 'to keep up rates,' and that they recently chartered a sailing vessel at San Francisco and sent her around Cape Horn in ballast in order to establish as a fact that the railroads were carrying all the freights offering at satisfactory rates. These men are the only enemies of the Nicaragua Canal that now remain, and they still maintain their agents to prevent its construction. Less

indefatigable in opposition to the Nicaragua Canal, and maintained stoutly how much more advantageous, commercially and otherwise, it would be to take a ship 150 miles upon a railway upon the Isthmus of Tehuantepec, over a rough country and an elevation of 750 feet, with steep grades on the Pacific slope, than for the vessel to pass through Lake Nicaragua, with a lockage of 110 feet elevation and a canal prism of twenty-seven miles, the remainder of the distance, 1,13 miles, being lake and estuary navigation. Yet, absurd as this proposition was, grave Senators supported the idea. Their report will be exhumed at some future time as proof of the blind ignorance that surrounded them. A guarantee of a large amount of bonds was made dependent on Eads carrying a vessel of 3,000 tons from sea to sea over the railway, with the absurd inference that were this actually accomplished the ship railway would therefore be a great commercial advantage.

"In the *New York Herald* of January 29, 1886, will be found an interview with an individual who had a gorgeous sign on Broadway, who pretended to have a concession to build the Nicaragua Canal, and did things 'right up to the handle, sir.' Whether he was at that time an 'annex' of the Panama Canal syndicate, of Eads's ship railway or of the moneyed magnates, he alone could tell. He is now in Washington to state anything that suits his fancy or his purposes in relation to his possession of the concession to construct the Nicaragua Canal. Men who are shameless enough to subsidize the Pacific Mail 'to keep up rates,' and send a ship around Cape Horn in ballast to establish as a fact that no freights could be obtained, will not fail to have all the men in Washington that they find useful to employ and use every means to prevent the construction of the canal that they assert 'will not pay.' Those are the men who wish to keep the population of the west coast as their vassals, and will do it if the use of tens of millions of their ill-gotten gains can effect the prevention of the construction of the Nicaragua Canal. For this reason it is essential that the canal construction should have some relation to the government that would forbid these railroad wreckers from an endeavor to wreck the canal, or through their money eventually possess themselves of the majority of the canal stock, to the detriment of the honest stockholders and to that of the great traffic of the world. Less injurious would it be, and hardly less humiliating, were our government to suggest to Great Britain that she should guarantee the bonds of the company on the terms proposed by the foreign relations committee of the Senate. That committee was unanimous. Senator Brown, of Georgia, although too ill to be in Washington, insisted upon being fully informed on the bill and the report, which he signed. Two months ago I received a note from ex-Senator Edmunds, in which he wrote: 'To allow the construction of the Nicaragua Canal to go abroad would be sheer madness.' The *California Bankers' Magazine* of April contains 'The Legal Outline of the Nicaragua Canal,' by John T. Doyle, an eminent lawyer of San Francisco. It should be read by our legislators, at least by all who are not learned on the canal question, not a few of whom have little comprehension of its importance and of the fact, very plainly stated by Mr. Doyle, that whatever people make that canal will not only control it financially, but will reap other material advantages therefrom, which cannot be lessened in any degree by congressional resolutions nor by our battleships, which are supposed by a New York newspaper to be numerous and so formidable as to be quite able to protect our coasts and even carry on an offensive warfare!"

RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department, on page 45.]

The News of Wall Street.

OFFICE OF MANUFACTURERS' RECORD,
No. 136 Liberty Street,
NEW YORK, June 21.

"What in the world will become of Richmond Terminal now I wonder?" "Is this a bluff of Pierpont Morgan's to make all concerned give him the absolute power over their property for a term of years?" "I told you so!"

That is what some people said when Drexel, Morgan & Co. broke their sphinx-like calm and made public this somewhat turbulent letter, that struck the Terminal crowd like a thunderbolt and made them sell down the stocks and bonds:

NEW YORK, June 28, 1892.

W. E. Strong, Esq., Chairman:

Dear Sir—Referring to our previous correspondence regarding the affairs of the Richmond Terminal system, we beg to say that we have made a careful investigation of the affairs of the Richmond & West Point Terminal Railway & Warehouse Co. and its allied corporations, and Mr. Spencer has, on our behalf, made a personal inspection of the entire system.

We have reached the conclusion that a reorganization is feasible on the basis of equity to all concerned, one that we should be prepared to undertake, and one which, in our opinion, would place your property on a sound financial basis.

The unparalleled complications and difficulties which must be met in this connection make it necessary, we need scarcely add, that we should, as your representatives and as far as possible, be protected against any single interest which might for personal or other reason desire to thwart the successful carrying out of such reorganization. With this in mind, we deemed it essential before any action on our part that a majority of each class of stock and bonds of Richmond & West Point Terminal Railway & Warehouse Co. be deposited with us, for the purpose of reorganization, and that all litigation should be put under our control, and persons of our own selection should be substituted for the receivers now in possession of the properties.

Therefore, upon learning of the appointment of receivers of the Richmond & Danville property by the United States Court, we applied to Mr. W. P. Clyde to know whether, in case we undertook the reorganization, the suit under his control would be transferred to us, and the present receivers resign in favor of Mr. Spencer, stating to him that, in our opinion, such a course was essential. He declines to give us any such assurance, and our conversation with him leads us to doubt his loyalty to any reorganization plan whatever, although he, as one of your committee, signed the request to us to undertake the same.

As, in our opinion, it is essential to the success of any plan that during the reorganization the properties involved should be under our control, as already mentioned, and as the position taken by Mr. Clyde makes this impossible, we are obliged reluctantly to decline the invitation to undertake the reorganization.

Thanking you for your confidence, we remain, dear sir, Yours very truly,

(Signed) DREXEL, MORGAN & CO.

There were not wanting those who said that this meant there was something behind it all that has not yet come to the surface. Drexel, Morgan & Co. intrigued to be put in the position of being asked to reorganize Richmond Terminal. It would be afeat equally great to be recorded with some of the other prodigious strokes of railway finesse and power for which this house is distinguished. It is believed by some that unless Mr. Clyde is mad he would not undertake of his own accord to try to put Pierpont Morgan in a hole, and that hence there must be others who deliberately planned a "squeeze." That is to say, once having got a plan launched with the Drexel party committed to it, he would stand over them with his Richmond & Danville auger in hand and shout, "Pay up, or I'll scuttle the ship!" But anyone must have perceived beforehand that the plot would be unmasked at the very outset, and rightly or wrongly Mr. Morgan seems to have shrewdly guessed that this was the ulterior motive, unless, as I said, there is something behind it all that does not at present figure in the proceedings.

Mr. Clyde comes back promptly at Mr. Morgan to-night in an interview, in which he says he has been put in an altogether wrong light.

In his statement Mr. Clyde asserts that the bill brought before Judge Bond by himself and others was drawn especially with reference to facilitating reorganization. It was expected that Drexel, Morgan & Co. would formulate a plan, would communicate the nature of this plan to the security-holders, and, having obtained the support of the security-holders, would, with the complainants and receivers, go before the court and obtain either the abrogation of the receiverships or such modifications as should then appear to be for the interest of the property. This, he said, was explained and published by himself and the other complainants at the time of the appointment of the receivers, and has since been personally urged by him upon Drexel, Morgan & Co., who, however, "unfortunately, for reasons unexplained, have seen fit to substitute for this obvious and business-like course the arbitrary and impracticable demands heretofore alluded to."

Referring to the allegations of Drexel, Morgan & Co. reflecting upon himself and questioning his loyalty to any reorganization plan whatever," Mr. Clyde said that if, as would appear to be the case, Drexel, Morgan & Co. suddenly found themselves in need of a scapegoat in connection with this business which they had had in hand for more than a month, it was a matter of not the slightest consequence to the security-holder or the public whether he or some one else should serve in this capacity, and it is therefore quite unnecessary to turn aside from the rehabilitation of the Terminal property, credit and securities to notice the personal attack further than to suggest that the correspondence which had passed between Drexel, Morgan & Co. and himself on this matter was in their hands, and they were at full liberty to publish it.

Mr. Clyde also said that he wished most distinctly and emphatically to protest against being considered an "insider" in Terminal or Danville affairs by the press or the public, and to state that he had not been directly or indirectly connected with the management of either the Danville or Terminal companies for the last five years, or since he and his friends sold out the control of the Danville at \$225 per share, which when so sold had over \$3,000,000 in cash in its treasury.

Well, whatever may be the outcome, the judgment of the moment seems to be that it puts the big Terminal brood on a very cold roost just now, for the shares sold down smartly, the greatest decline for the day being in the 5s, which fell 3 per cent., and all classes 1 per cent. or over. The East Tennessee bondholders' committee held a meeting and issued the following:

The undersigned, owning and representing a majority of the equipment and improvement bonds of the East Tennessee, Virginia & Georgia Railway Co., have been asked by other owners of large amounts of the bonds to form a committee for the protection of the interests of the bondholders in the present unsettled condition of the affairs of the company, due to the complications of the Richmond Terminal system, and believing that a reorganization of the East Tennessee property, with the large expenses attendant thereon, is unnecessary, we now invite the co-operation of other bondholders.

Parties desiring to place their interests in our charge may do so by addressing any of the undersigned.

GEORGE COPPEL, 24 Exchange Place.
WILLIAM L. BULL, 38 Broad street.
EVELYN HESLTINE, 1 Drapers Gardens, Throgmorton street, London.

New York, June 28, 1892.

This sounds as if they had seen what was coming and wanted the thing to drop before making this public. Eugene Kelly et al., representing the general mortgage and extension bonds, announces that a majority of interest in these securities had agreed on a plan of reorganization and

named the Central Trust Co. as depositary.

Meanwhile we can wait and see what comes of it. The railroads won't run away, and traffic will not stop just because Mr. Morgan and Mr. Clyde are at present in a little contest at the old game of "how not to do it." The receivers will go ahead and run the road. To be sure it is awkward to own shares and bonds of whose exact position you can't be sure from one day to another, but that is the fortune of war.

An ingenious gentleman patches together this little bit of guess-work, which I tell simply because it is amusing. President Roberts, of the Pennsylvania Railroad, never will forgive the Drexels for backing up the Reading deal. He also dreads rivalry in his Southern business such as might develop if the Richmond Terminal system should become powerful and make strong alliances, for instance, with the Reading itself. Here is a chance, then, for him to humiliate the Drexels and choke off, perhaps, an infant Hercules. Mr. Clyde enjoys a steamboat and canal franchise controlled by Mr. Roberts' directors. Suppose Mr. Roberts had said to Mr. Clyde, "You keep that receivership or I'll take away the canal"—and Mr. Roberts would have done it too.

Quite ingenious, isn't it?

The Richmond & Danville to Pay July Interest.

The receivers of the Richmond & Danville Railroad Co. have been authorized by Judge Bond, of the United States Circuit Court at Baltimore, to issue receivers' certificates to an amount not exceeding \$1,000,000. The money will be used to pay the outstanding indebtedness for material and supplies of the Richmond & Danville prior to the appointment of receivers and the car rentals and interest obligations of the leased lines. The receivers expect to pay out about \$700,000 during July. The order was passed upon the petition of Wm. P. Clyde, J. C. Maben, Wm. H. Goadby and others.

This order signifies the prompt payment of the July interest on the Richmond & Danville bonds, as by the issuance of certificates all outstanding obligations are capitalized and the receivers are enabled to use money in the treasury to meet the interest on the bonds.

The roads of the Richmond & Danville system whose bonds are listed on the Baltimore Stock Exchange, and on which interest matures July 1, are as follows: Atlanta & Charlotte 1st 7s, \$4,250,000; Charlotte, Columbia & Augusta 1st 7s, \$2,000,000; Georgia Pacific 1st 6s, \$5,660,000; Richmond & Danville gold 6s, \$6,000,000; Western North Carolina 6s, \$3,775,000.

Receivership for the East Tennessee, Virginia & Georgia.

The East Tennessee furnishes the railroad sensation of the week by at last reaching the receivership stage. This action was hastened by the complications of the Richmond Terminal, which owns 19,000 shares of the stock in the East Tennessee, Virginia & Georgia Railroad Co., its insolvency preventing any appeal for support by the East Tennessee to its stockholders.

The petition was filed by Gen. Samuel W. Thomas as a large creditor and stockholder in the United States Circuit Court at Nashville.

The bill charged that the company owed about \$50,000,000 of bonded indebtedness and a large floating debt; that it will be unable to meet its interest due July 1, and has failed to pay its debts of notes payable on demand; that it has no credit and is insolvent, and that this state of affairs has been brought about by the reason that it has been worked as a common system with the Richmond Terminal, which latter road has gone into a receivership. This has

complicated matters, and the friends who are willing to assist the road are now unwilling to do so because of these complications. The bill says that this application is made because as soon as the inevitable default of the July interest is made creditors will enter suits in the State courts wherever the property lies, and this will hamper the line and cause it to be sold out in parcels, thus working an injury to all which could be avoided by the company's property being administered as one trust.

The receivers appointed are Charles M. McGhee, formerly president of the Memphis & Charleston, and Henry Fink. They have taken possession of the entire property, including the Louisville Southern and all leased lines. The present force of officers and agents will likely be retained.

A Prosperous Road.

The Norfolk Southern Railway Co. is making a splendid showing under its reorganization, which took place June 1, 1891. The mileage of the road is 113. The capital stock is \$2,000,000 and the bonded debt \$625,000 first mortgage 5 per cent. gold bonds. All of the net earnings up to January 1, 1892, were expended on the property, as agreed in the reorganization. The net earnings for the first five months of the current calendar year were \$67,872; net earnings for June are estimated at \$10,000, making \$77,862 net earnings for six months. Interest charges for six months amount to \$15,625, leaving a balance of \$62,247, out of which a dividend of 1 per cent., or \$20,000, has just been declared, payable July 12. This leaves surplus on hand applicable to future interest and dividends of \$42,247.

Railroad Notes.

R. R. ROGERS, general passenger agent of the Louisville, New Orleans & Texas Railroad, has resigned. The vacancy will doubtless be filled by the Illinois Central, which has acquired that road.

THE rumor is gaining credence that the Illinois Central has in contemplation the purchase of the Newport News & Mississippi Valley Railroad.

THE following changes have been made by D. B. Robinson, the new president of the San Antonio & Aransas Pass Railway: Charles D. Dorman, of New York, is appointed auditor to succeed H. Michelson; William H. Field, cashier, to succeed C. S. Wheeling. The office of general superintendent, which was filled by George L. Sands, is abolished, and F. E. Nelson appointed superintendent of transportation, with headquarters at San Antonio. A. W. Houston has been made general counsel to succeed William Aulrey. William Berry has been appointed superintendent of the road department, and will have charge of the maintenance of way bridges, buildings and water service, with headquarters at Yoakum, Texas.

THE following reports of gross earnings for the third week of June are made: Louisville & Nashville \$391,940, an increase of \$35,570; Louisville, St. Louis & Texas \$11,800, increase \$3,747; Missouri, Kansas & Texas \$185,703, increase \$13,620, and Norfolk & Western \$160,515, an increase of \$17,366.

A. P. MANN, JR., general manager of the Silver Springs, Ocala & Gulf Railroad, has resigned.

IT is announced that the Georgia Central and the Georgia Southern & Florida have formed an agreement by which they bind themselves in future to an interchange of traffic. This action, it is said, will precipitate another rate war.

At the annual meeting of the Lynchburg & Durham Railroad, held in Lynchburg, Va., the old board of directors were re-elected. W. C. Houston, Jr., was re-

elected president, with Peter J. Otey as first vice-president and Mr. J. C. Carr, second vice-president.

A COMPARATIVE statement of gross earnings and operating expenses of the Northern Central Railway Co. for the month of May shows net earnings to be \$120,174, against \$176,606 for the same month of last year. The net earnings for the five months ending May 31 are \$733,799, against \$772,445 for the same period of 1891.

Launch of the Texas.

The Texas, which is the largest battleship of the United States Navy, was launched on Tuesday last from the Norfolk navy-yard. All preparatory details, including special precautions made necessary by the narrow channel into which the ship was launched, to prevent the momentum from carrying her too far out were carefully looked after, and as the last timber was cut through the ship glided easily and smoothly down the way. A moment after the ship's first plunge she lay quietly at anchor in mid-stream, successfully launched. Miss Mary H. Williams, of Texas, performed the christening, and a notable gathering witnessed the ceremony.

The Texas is a steel-armored, twin screw, second-class battleship of 6,335 tons normal displacement. Her principal dimensions are: Length, 290 feet; extreme breadth, sixty-four feet one inch; moulded depth, thirty-nine feet eight inches; designed draft of water forward, twenty-two feet, and designed draft of water aft, twenty-three feet. The mean draft will be twenty-two feet six inches when carrying about 500 tons of coal, with which amount she can steam 1,110 miles at her estimated highest speed, seventeen knots, or 850 miles at ten knots.

The ship is divided by two sets of triple expansion engines, each having three cylinders thirty-six, fifty-seven and seventy-eight inches in diameter, with a common stroke of thirty-nine inches, capable of developing 5,800 horse-power with natural draft and 8,600 with an air pressure of two inches of water. There are four double-ended steam boilers fourteen feet in diameter and seventeen feet long, each having six corrugated furnace flues; total heating surface about 17,000 square feet, total grade surface about 500 square feet. The working pressure is 150 pounds per square inch. All four boilers are connected to one smokepipe. The propellers are four-bladed and fourteen feet six inches in diameter.

The Fruit Crop in Georgia.

The Georgia fruit crop is a big thing this year, and everybody is interested in knowing what the growers will make out of it. In the peach and grape crops alone conservative estimates reported by the Foit Valley Leader show that about 500 carloads of peaches and 100 carloads of grapes will leave the State for foreign markets during the present season. The estimated receipts for the peach and grape crops combined are \$750,000. Reports show that the peaches are well formed, of good size and perfectly sound, and this, together with the decrease in yield from last year, makes good prices and ready sales an assured fact. Other important fruit crops will largely swell the total sales, and lots of summer money will be put in circulation where it will do good.—Columbus (Ga.) Enquirer Sun.

IN the advertisement of the American Cotton Oil Co., which appears on page 50, there were errors in the number of bonds drawn which were caused by the dropping of type in two previous issues. The numbers which appeared indistinctly were: 60, 188, 366, 525, 826, 897, 1,175, 1,188, 1,210, 1,541, 1,571, 1,754, 1,908, 1,920, 2,101, 2,411, 2,829, 2,908, 3,145, 3,159, 3,314 and 3,458.

LUMBER MATTERS.

[For lumber market reports see pages 41, 42 and 43. In the Construction Department, on pages 44 and 45, will be found a complete record of new mills and building operations in the South.]

Foreign Trade in American Staves.

The Department of State has issued a special consular report on the American stave trade abroad. Few people are aware of the extent to which this has grown, nor is it generally known that some of the European wines imported here are in casks made from wood grown in this country. These reports show that nearly \$2,000,000 worth of American staves were purchased abroad during 1890, and while this represents only a fraction of the total number of staves used, the trade is increasing wherever introduced, and its larger growth only depends upon the exertion made to push it. The greater part of these staves were made in the Southern States and shipped from Southern ports, a small portion only coming from Michigan and other Northern States.

The American staves are greatly preferred for their superior density and elasticity. In France the brandy-makers say that the American oak injures the flavor of their product, and in some German cities the beer-makers say that it colors the beer, but apart from these it appears to have met with marked favor in almost all places. Two suggestions are made by nearly all the consuls, and are worth attending to. It appears that American shippers of staves do not pay attention to the shape and kind of stave required in various places, and that this be done is strongly urged. Stave timber here is split so that a cross section has a wedge shape, and this is seriously objected to as making unnecessary waste in cutting staves. Another thing is that most continental buyers prefer examining and selecting the staves before purchasing, and as there are no stockhouses where they can do this with American staves, they do not buy as readily or as willingly as otherwise. The consuls recommend, therefore, that Americans secure a warehouse at some large port and then send a traveling man through Europe to work up a trade just as they do at home.

The almost unanimous opinion of these consuls is that by properly attending to this trade it can be greatly enlarged. In some few places there is a duty on the staves which is practically prohibitory, but in the majority of cases the duty is light. The consul in Chemnitz states that stave timber from America would, if carefully cut, find an immediate sale in Germany as soon as it was known to be on the market. From Cologne the consul writes that oak timber is growing more and more scarce in Germany, and American staves can now easily compete with the German staves or others imported there. During 1890 Germany imported 7,926 tons of staves, of which 350 tons came from America, and the latter is so much preferred that one large manufacturer in Frankfort-on-the-Main has given an order to a St. Louis firm, who will ship by rail to Boston and thence by steamer to Rotterdam, where the consignee will receive it.

From Catania, Italy, the consul writes that there are annually exported 4,000,000 boxes of oranges and lemons, and the wood for the boxes has all to be imported. This is a suggestion worth acting on, as he further states that a large proportion of the fruit comes to the United States and the vessels frequently return without a full cargo.

There is an opportunity here to develop a large trade, and as our Southern white oak is considered the best and is, fortunately, in great abundance, the growth of the trade depends upon the energy

which will be displayed in pushing it. It is well worth trying for and means much for the South.

Lumber Matters in Memphis

[From our own Correspondent.]

MEMPHIS, TENN., June 28.

T. B. Allen & Co., our heaviest hardwood foreign shippers, have had a series of mishaps during this spring and early summer, the last one being the sinking of their boat "P. H. Kelley" in Pearl river with a full load of staves.

I notice that there has been another lowering of lumber freight rates between Chicago and extreme Western points, making the rates about half what they are between Memphis and the same places.

Last week a couple of carloads of hardwood were shipped from here to London (England) by the Louisville & Nashville road via Boston at a rate of forty-five cents, while the rate from here to Texas points is forty-two cents.

Capt. W. L. Burton, of New Orleans, was in the MANUFACTURERS' RECORD office this week. He represents the Ruddock Cypress Co., which has recently put up a mill of 50,000 feet capacity near New Orleans. It is a single band mill which he claims to be the best built and most efficiently equipped in the South. W. H. Wetmore, representing A. B. Wetmore, a New York lumber concern, also called.

They each seemed to think the outlook, especially for the better grades of hardwood, was more promising than it had been for a long time. This seems to be the prevailing opinion among all our lumber men, both local and shipping.

There are some new enterprises coming in this section, and more are looking around and willing to come if they can find sufficient encouragement. The Harrisburg (Ark.) Canning Co. has just been incorporated with a capital of \$10,000. J. N. Jones is the leading director. The Fort Smith (Ark.) Chair Co. has filed its articles of incorporation; capital \$10,000. H. H. Hoover, W. T. Cate and E. H. Stevenson are the incorporators. The American Railway Water Supply Co., which has the control of the patents for the automatic filling of railroad water-tanks, are negotiating with the Raleigh Electric Line (which runs some twelve miles out from here) to put up shops at their terminus. If the trade is made they will put up a \$100,000 plant.

The land commissioner of the L. N. O. & T. road tells me that they have on hand and nearly completed arrangements for putting up at Renovo, on the line of their road, the largest saw mill that has ever been built in the South. The arrangements now promise to be perfected and work to commence in a few weeks.

Mr. Toenzer, for many years bookkeeper and manager for the heavy lumber shipping firm of I. M. Darnell, Son & Co. has just returned from a journey and reports the lumber business very promising.

North Carolina Lumber Co.'s New Mill.

The North Carolina Lumber Co. is making rapid progress with its new mills at Tillery, N. C., which, when completed, will be one of the most extensive lumber plants in the State. Among the buildings under construction are the planing factory 200x100 feet in size, containing six planers, a gang ripper and resaw with 150 horse-power. A dry-kiln 70x112 feet in size contains six rooms, in each of which will be placed a Surtevant kiln. The saw mill, 50x70 feet, is fitted with all the modern appliances, with a capacity of 35,000 feet per day. A large warehouse has been completed, situated between the railroad tracks, for storage of freight, etc. An artificial pond of eight acres will furnish a water supply sufficient for all purposes required in the

running of this plant. The location of this industry will be a great factor in building up and developing trade generally in this section.

Southern Lumber Notes.

THE East Tennessee Manufacturing Co., of Chattanooga, manufacturers of sash, doors, etc., is enlarging its buildings and will add a story to its main shop.

THE Tampa (Fla.) Suburban Railroad Co., mentioned last week as having purchased the Hathaway mill property, will at once put the mill in shape and start sawing lumber.

THE property of the Southern Lumber Co., of Atlanta, Ga., consisting of two saw mills and 25,000 acres of timber located in Southwest Georgia and now in the hands of D. L. Cheatham, receiver, will be sold at public outcry on September 6th. It is said that the concern's assets are about \$250,000 and its liabilities more.

THE Ritchie Lumber Co., of Petroleum, W. Va., to which a charter was recently granted, has organized with E. S. Zhurick, president; W. H. Rutherford, secretary, and R. H. Rutherford, treasurer. The company's capital stock is \$50,000.

J. E. ETTRIDGE will build at Norfolk, Va., a brick and frame saw and planing mill 50x80 feet at a cost of about \$5,000.

BAGGETT, SMITH & CO. and J. M. Baggett & Co., of Douglasville, Ga., have been succeeded in the planing mill, variety works and lumber business by Messrs. Baggett Bros. & Co.

MESSRS. G. M. WHEELER & CO. have succeeded to the saw mill and lumber business of Wheeler & Dillee, at Morriston, Ark.

THE Smith & Thomas Lumber Co., of Williford, Ga., has purchased and will operate Jackson, Conner & Co.'s saw mill at Rochelle, Ga.

THE Bridgeport (Ala.) Lumber Co. has an order from a New York veneer mill for a carload of quartered oak flitches.

THE A. M. Stevens Lumber Co., of Dyersburg, Tenn., has just completed its new circular mill, with a capacity of 40,000 feet daily (10 hours).

J. W. THOMPSON, president of the Netleton (Miss.) Hardwood Lumber Co., while on trip to the North and Northwest recently, closed a contract with Indiana parties for the output of his mill for 1892 of oak, ash and poplar, which will amount to about 4,000,000 feet. Mr. Thompson's concern also has a standing order from Chicago parties for all the cypress it can cut during 1892 and 1893.

THE Whaley & Miner Lumber Co.'s saw-mill plant, dry-kilns, timber lands, etc., at Delaware's, Va., will be sold at public auction on July 20th by E. E. Holland, Robert R. Prentiss and W. W. Webb, receivers.

THE Patten Sash, Door & Building Co., to which a charter was granted at Rome, Ga., recently, has organized with Joseph B. Patten as president and Chas. E. Patten secretary and treasurer. The company's purpose is to manufacture sash, doors and building material generally. Its capital stock is \$30,000, with privilege of increasing to \$100,000.

Alabama Coal in the West Indies.

[From the *Courier*, Connellsburg, Pa.]

Alabama coal is securing a reputation in the Spanish West Indies, and the river and rail improvements of the Southern States will undoubtedly create an important Gulf trade. The new reciprocity policy, by which the United States are enabled to import Cuban sugar, will of course assist the American coal exporter even more effectively than the new lines of railway.

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BALTIMORE, JULY 1, 1892.

Notice to Advertisers.

The last forms containing advertisements are closed on Tuesday afternoon. New advertisements or changes should be received not later than Tuesday noon to ensure attention in the issue bearing date of the following Friday. Reading matter should be in our office on Wednesday, although late news can be received early Thursday morning.

THERE is to-day no better field for investment than in the South. Industries of all kinds, if properly located with regard to their requirements for raw material and for reaching a market, are sure of success if managed with ordinary business prudence. The growth of the country has been phenomenal, but anyone who is familiar with its many parts will readily concede that it is but the beginning of a development which will fill it with thriving towns and villages. The faults of the past cannot be recalled and the future is the gainer in experience. Each generation is wiser than the preceding one in having the additional knowledge of its times. So with the South, each succeeding year brings with it the experience of the past and conditions of the present, and the workers are guided by the one and direct the other to their benefit.

The Presidential Campaign
and Business.

There are certain elements in the action of both the Republican and Democratic presidential nominating conventions that ought to do much towards destroying the popular belief that presidential years are off periods in business. The nominations that have been made by these two conventions ought to be regarded from one point of view with much satisfaction by business men, regardless of their political beliefs. The nomination for the presidency of two men who have filled that office, and whose policy is known beyond a doubt, gives to the presidential situation an element of certainty that must go a long way towards establishing confidence in business circles, and thus destroy the traditional dullness of presidential years. Whether the policy of

Mr. Cleveland or that of Mr. Harrison shall prove most satisfactory to the majority of our people—we are dealing with no uncertainties—and the effect of the election of either of these candidates can be pretty clearly foretold at this time. The discussion of purely political topics is outside of our mission, but we cannot refrain from congratulating the country upon the present presidential situation, which contains less of doubt and uncertainty as to future policies than could have been found in any presidential campaign for many years. We believe this to be the first presidential campaign in the history of our country in which the opposing candidates have both been ex-presidents.

The Opponents of the Nicaraguan Canal.

We reprint on another page of this issue a very interesting communication from Rear Admiral Daniel Ammen, who writes to the Baltimore Sun about the recent Nicaraguan Canal convention at St. Louis and the attitude of the opponents to the great interoceanic short cut. In his communication Rear Admiral Ammen makes some pretty pointed comments, and charges that the principal opponents of the canal are the great trans-continental railway magnates, who carry their opposition to the extent of paying \$70,000 per month to the Pacific Mail Steamship Co. for keeping up freight rates to the Pacific coast via Cape Horn. It is further charged that these antagonists of the Nicaraguan Canal recently chartered a vessel and sent it in ballast from San Francisco to the eastern coast in order that they might point to this ship as demonstrating the fact that there was not sufficient traffic to warrant any additional facilities between the Atlantic and Pacific coasts.

These are serious charges, and we would prefer not to believe them if they were endorsed by any less reliable authority than Rear Admiral Ammen, but they bear the color of veracity, and we fear that there is good ground for believing that the opposition to the Nicaraguan Canal is of the character that Rear Admiral Ammen describes. It is obvious that a very powerful influence is being brought to bear against the Nicaraguan Canal from many points and in various forms, and it is equally obvious that this opposition is not of a disinterested character. Those who are opposing the construction of the canal, and who limit their antagonism to expressions of disbelief in the feasibility of the scheme, have obviously personal interests at stake, and even more evident is the interested character of the influence that is being exerted against the Nicaraguan Canal in Congress. Now and then there is a great outcry against extending any government aid or even recognition to this great project on the ground that it is not the function of our government to provide in any form for a private enterprise of this character, but those whose opposition assumes this form would be very willing to ask for and to accept government aid for any project of their own, whether it be in the form of subsidy for a steamship line or a government guarantee of the bonds of a trans continental railroad.

Undoubtedly there is a great deal in what Rear Admiral Ammen says, and, despite the interested opposition of these subsidy-fed gentlemen, we hope to see public sentiment and the true interests of our great commercial industries exert their

proper influence and be credited with what is properly their own. We hope to see our national government extend its aid to the Nicaraguan Canal to the fullest extent possible and practicable. There is no doubt that the canal will be built. It is merely a question of how and when, and our national government has the strongest voice in settling this all important question. To the South the construction of this interoceanic short cut is a matter of the utmost importance, and we hope and urge that every member of Congress and every man of influence in the South will exert himself actively in behalf of this project. The projectors of this enterprise are asking of our government nothing that is unreasonable, nothing that is impracticable, nothing for which precedent cannot be found in our own history as well as in the history of other nations. What has been asked ought to be granted, and more if needed.

Foreign Trade from Southern Ports.

There has been of late vigorous agitation of the possibility of opening through trade from South Atlantic ports to Europe, and sufficient progress has been made towards the formulation of definite plans to warrant the belief that something substantial and beneficial will result from the discussion of this matter in business circles in the South and by Southern newspapers. Col. Thomas P. Stovall and Col. I. W. Avery, of Atlanta, Ga., have taken a very prominent part in this movement, and it is chiefly through their efforts that the present interest in the foreign shipping trade of the South Atlantic ports has been aroused. We print upon another page an article which deals with this question at considerable length, and shows pretty clearly with what serious interest the matter is now being considered in Southern commercial circles.

There is at present considerable direct foreign trade from Gulf ports, notably New Orleans, Galveston and Mobile, but the present movement more directly concerns the ports on the South Atlantic coast—Atlanta, Savannah, Charleston, Brunswick and others. While it may be something of a paradoxical statement, it may be said that the absence of direct foreign steamship lines from these ports is due simply to the fact that they have never been started, or, to put the matter a little differently, there exists every condition and requisite for their support, and they need only to be established in order to meet with success and be assured permanency.

The merchants of the South are getting large amounts of imported merchandise, which reaches them at present chiefly through New York and other Northern ports. By a concentration of shipments at foreign ports this trade would assume sufficient importance to contribute very largely to the support of a number of steamship lines. It is not the absence of importations that explains the lack of direct communication with foreign ports, but the trouble lies in the present scattered character of this foreign trade, which is divided among many ports and many steamship lines. If the merchants of the South Atlantic coast would concentrate all their importations they would show a very much larger bulk of foreign business than is generally supposed. There is no reason why Southern merchants should continue to import their goods through Northern ports and pay for transhipment Southward from the port of

entry when they can save money and build up a very important shipping business by bringing their importations through their Southern ports.

In the matter of exports there is already a large foreign trade in cotton, lumber and naval stores, but there are possibilities of an enormous increase in this business and in the addition of many other important items of export. There is no reason except the present lack of facilities why there should not be a very large export trade in grain from Southern ports landed there by rail lines from the West. We are informed that steps are being taken towards the establishment of this branch of export trade with promise of great success.

We are glad to see the interest that is being manifested in this movement and the support that is being given to it by the railroads, by the merchants, by the importers and by the Southern newspapers. Colonel Stovall and Colonel Avery are entitled to great commendation for the earnestness and activity and the success with which they have urged the establishment of this branch of trade. We hope to see the agitation carried to a successful conclusion with results such as will draw an immense volume of business to South Atlantic ports.

Experimental Work with Sorghum.

The value of sorghum as a sugar-producing plant has been the subject of extensive investigations by the Department of Agriculture, and Bulletin No. 34 just issued upon the subject gives good reason to believe that many of the obstacles which have hitherto stood in the way will be removed. The great difficulty with sorghum juice has been to get it to crystallize effectively, owing to the starch or elementary sugar contained in it. This has been remedied to a great extent by the use of the diffusion process of juice extraction, and as a result sugar mills will be able to start their machinery from sixty to ninety days earlier than when they have had to wait for the regular cane crop to come in. By this means a greater output will be secured from each mill and consequently the capital cost on the product reduced.

The climate and soil of Louisiana are well suited to the growth of sorghum, and while it should not in any way replace the tropical cane, it will form an auxiliary crop of value to small and large planters, as well as to the mills. A peculiarity of the sorghum cane is its susceptibility to variations in the weather or soil, which make the time of maturity uncertain and render it difficult to plant so as to have different plantings ripen in succession.

Sorghum has been raised for years by the farmers throughout the South and the juice crudely expressed and boiled down to molasses for home consumption. Thus far every effort to produce a crystallized sugar from it has failed, and the success which has attended this trial will be a benefit to all farmers who can reach a mill. The cane is easily grown, does not require much attention, and will form an acceptable addition to the farmer's revenue. In Kansas large amounts of cane have been raised, but the lack of a process whereby the sugar could be secured has been a serious drawback. With the results of this experimental work, showing both the best plants to use and the means of extraction, it is possible that mills for the purpose might be advantageously located outside of Louisiana.

PRESERVING OUR FOREST RESOURCES.

In an address recently delivered before the Genessee Valley Forestry Association Prof. B. E. Farnow discussed a feature of forestry which is of immediate interest to every one. Estimating that there are in this country 500,000,000 acres of woodland, containing 1,500,000,000,000 cubic feet of timber, and the annual consumption about 25,000,000,000 cubic feet, these supplies would be exhausted in from sixty to seventy years, the new growth being consumed by the increasing requirements. As it takes from fifty to seventy-five years for hardwood trees to mature the necessity for reforestation is apparent, and, as he further says, an investment in this form may prove one of the best of savings banks.

To realize money from forest culture does not always necessitate planting, though on ground which is otherwise useless this is beyond question one of the best things to do. Careful attention to existing woodlands, keeping them clean, trimming out thickets and giving care to young saplings will accomplish the same end. If farmers and others owning forest land would view it in the same light as they do an orchard, as requiring and deserving the same attention, they would find the benefit derived to be in the same proportion as the work given. There is a formula governing this and all other classes of work, one which has been in force ever since Adam cut firewood with which to boil his potatoes. It is:—Results—(Energy + Foresight). A land owner who keeps his forest clear and thus allows the trees to attain a good growth without crowding, will be able to realize from the small stuff cut out, and when it is desirable can sell whatever number of the older trees he thinks right, replacing them by saplings which in time will reach the desired size, be cut and again replaced. In this way a forest can be made to yield an annual profit. Such a plan is particularly applicable to farmers who own small tracts of woodland. The brush and limbs of trees cut down will furnish their firewood, and the sale of the timber be a source of revenue. Replanting is not an expensive item, as preparations for it can be made when there is little else on hand and the actual work takes but little time. The forest being clear offers a better and safer shelter for stock, it helps to govern the flow of water in streams and springs, and certainly would be more sightly than the thicket of briars, underbrush and dead and fallen trees usually seen on farm woodlands.

THE VALUE OF COKE BYE-PRODUCTS.

Since the publication of the series of articles on the "Bye-Products in the Coking Process" in this paper we have learned that a large gas works in an Eastern city is receiving for the bye-products produced per 2,000 pounds of coal, thirty-five cents for coal-tar and twenty six cents for ammonia liquor, a total of sixty-one cents per ton of coal at the works. Applying these figures to the bye-products from improved ovens, and assuming the yield of coke to be 70 per cent., the saving per ton of coke, or the amount received for the bye-products, would be 86.6 cents. Deducting from this the difference between the labor cost in beehive ovens (forty-five cents) and in improved ovens (sixty cents), there remains 71.6 cents clear profit per ton of coke, or assuming further that a

furnace uses one and one-half tons coke per ton iron, a gain of \$1.07 4-10 per ton of iron.

While the gas works in question is, of course, favorably located for the disposal of its bye-products to chemical manufacturers, there is such a large margin that, deducting freight from Southern points, there would still be a profit to the operators. But shipping these products to Northern cities is not by any means the sole object in view. The erection in the South of a sufficient number of these ovens to guarantee a supply would necessarily result in the establishment near them of large chemical industries to work the ammonia liquor into ammonia, for which there is an enormous demand, and into its salts, as well as treating the coal-tar and producing from it the many valuable substances it contains. For illustration, take a plant of 400 beehive ovens, such as that at Bessemer, Ala. The coking process costs, for labor and repairs, forty cents per ton, the coal about eighty cents per ton, and the yield of coke is, approximately, 59 per cent. These ovens produce annually about 150,000 tons of coke, valued at \$2.20 per ton, according to present prices in Birmingham, and consume 254,237 tons of coal. The annual expense, therefore, would be, for labor in coking \$60,000, and for the coal consumed \$203,389, or a total of \$263,389, against a total value of \$330,000 for the output, from which must be deducted interest on the investment and depreciation, say \$12,000, leaving a net gain of \$54,611 for the plant.

With improved ovens, using the same amount of coal and allowing sixty cents per ton of coke as the labor cost and 70 per cent. the yield, there would be expended for coal \$203,389, and for labor in coking the 177,966 tons of coke produced \$106,779, a total of \$310,168. For this would be received \$381,525 for the coke and \$155,084 for the bye products, a total of \$536,609, leaving a balance of \$226,644, from which deduct four times as much interest and depreciation as in the former case, leaving a net profit of \$178,441, equal to 6 per cent. interest on a capital of \$2,974,016. Surely this deserves investigation.

NOTES ON WOOL GROWING.

THE South possesses great possibilities in the direction of sheep raising. There are immense areas of land that could well be utilized for this purpose, not only in Texas, where wool growing is already a great industry, but also in Virginia, North Carolina and Tennessee. During recent years an increased interest in this branch of industry has been developed, but the business has not yet been entered upon with anything like the energy and activity warranted by the possibilities of the South. The following notes on wool growing, which have been drawn chiefly from actual experience and observation by the writer, may be of considerable interest.

IN selecting a range for sheep care should be taken to remove from it, as completely as possible, all briars or burrs which would attach themselves to the wool. An ounce of prevention is worth more than a pound of cure, and this will save picking burrs from the wool afterward. It helps to avoid tangles and dirt, and saves time and trouble in clipping and cleaning, increasing also the value of the wool.

No matter how large or small the range may be, there should always be plenty of shade and water, and a shelter should be provided where the sheep can be kept at

night or during inclement weather. It is a common practice to allow them to remain out at night or in the rain, and raisers do not seem to realize that by so doing they encourage the growth of disease and coarse hairs. Dead hairs are always more plentiful on sheep exposed to the weather. The better protected and cared for the animal is, the finer and more valuable will its wool be.

WHEN the sheep are driven in at night they should pass singly through the wicket and be examined to see if any burrs or tangles are in the wool. If any have been caught in the bushes and had part of the wool torn off they should be kept separate from the rest and the bare place well washed and oiled. The ground under the shelter should be kept clean, and long troughs should be provided for flowing water and for feed at times when the sheep are kept inside. The troughs should be long, low and shallow, and a sufficient number of them to prevent the sheep from crowding.

IF any sheep have signs of sickness they should at once be separated from the flock and placed in a small enclosure where they can be fed and sheltered. Careful attention should be given to disease, for, if allowed to run on, it may soon communicate itself to the entire flock, and either destroy them, or at least greatly depreciate the value of the wool. The soundness of the wool fibre depends entirely upon the health of the sheep, and this, therefore, cannot receive too close observation.

CROSS BREEDING, unless done with the greatest judgment, is unsatisfactory. It introduces long and short fibres into the wool, and makes it a mixed grade of less value than either length would be if sold singly. The average raiser had better secure good stock to begin with and not experiment, unless he feels that he can afford to take the chances, which are against successful issue.

SHEEP that feed on rich grass lands have the whitest and most valuable wools. The poorer the land the less valuable will the wool be. Red soils will sometimes give a tinge to the wool, as will sandy soil. Some wools are brown, black, gray and yellow, but these colors are owing to the nature of the sheep and beyond the power of the raiser to alter. Tinges greatly reduce the value of wool, and every effort should be made to keep it white and clean.

THE length and fineness of the wool fibre are mainly determined by climate. In cold and raw climates the fibre will be coarse and long, and in warmer and more favorable ones fine and shorter. A long-wooled sheep, if introduced to a warmer climate, will gradually change into a shorter and fine wool, and the same in taking fine wool sheep to a colder climate. The kind of grazing land and care given to the animal play an important part in keeping the wool good.

IN a true-bred sheep each staple of wool or lock naturally formed by the fibres will have all of the fibres of the same length, and each fibre will be finer at the point than the root. In cross-bred or ill-kept sheep, or those which have been exposed to the weather, these fibres will be uneven in length, thicker at the point than the root, and mixed with "kemp" or dead hairs. These things detract greatly from the value of wool and should be guarded against by the grower.

THE best quality of wool from each sheep comes from the lower half of the sides between the fore and hind legs. That from the side of the neck is shorter, but otherwise as good. The wool from the upper part of the neck and back is faulty and of inferior staple. On the loin

the wool is coarse and short, and from the breech down is very coarse. Under the belly and behind the fore-legs the wool is short and dirty, increasing in fineness toward the front. In the front of the throat it is short and worn with rubbing, and on the head and legs is short, rough, coarse and of little value. Dead hairs will most likely occur at the breech and front of throat, and gray wool on the side and top of the neck.

AT clipping time the sheep should be thoroughly washed and dried before shearing. If this is not done the wool will retain a yellowish tinge, which cannot afterward be removed. The water used must be free from lime, as this forms sticky compounds with the soap which cannot be washed away. The soap used should not have much free alkali in it, as this will make the wool harsh and dry.

AFTER clipping the sheep must be carefully attended to, and particular pains taken to keep them sheltered at night or during bad weather. When sheep are clipped in early November they should not be allowed on the range in any but the brightest and warmest days, and, should a cold wind come up, must be driven inside without delay.

AFTER the wool is clipped any tangles, burrs or dirt should be picked out. It then should be carefully rolled up and taken to the buyer with as little delay as possible. If kept for any length of time it will assume a slight tinge of yellow.

IF growers do not pay attention to the needs of the sheep and to keeping the wool in shape they should not be surprised at their failure to make money. With proper care—and it needs a great deal—sheep-raising is a most profitable undertaking, but unless this is given it is sure to fail.

IMPROVEMENTS AT THE WYTHE LEAD AND ZINC WORKS.

THE Wythe Lead & Zinc Mine Co., of Austinville, Va., have recently added some very valuable improvements to their property in the way of a stationary electric power plant (the first in Virginia), by which they drive a machine for pugging fire clay for making retorts and condensers, and a retort machine with capacity of eighty retorts per day.

They have also recently put in operation a magnetic iron ore separator to separate the iron (brown hematite), which is rendered highly magnetic by a peculiar method of roasting. The capacity of the machine is six tons magnetized iron ore per day and ten to twelve tons dressed zinc ore per day. After this separation the product of their spelter furnaces is increased fully 50 per cent. They have also put in operation an excellent system of water works and electric lights, and are almost ready to put in operation a double iron ore washer with capacity of forty to fifty tons per day of limonite iron ore, and may, in the near future, put in another washer to double this capacity. The machinery is all propelled by water power; no steam used except to drive iron ore washer.

They are also remodeling all of their lead furnaces and enlarging the same to work up a large stock of lead ore and slag which has been accumulating. They will in a short time be ready to put in operation their shot manufacturing works.

THE Tennessee Manufacturing Co., of Nashville, will elect a board of directors and issue \$250,000 of second mortgage bonds in order to provide capital for putting its old cotton mill in operation. At the meeting of the company last week over \$100,000 of this new issue was subscribed for by the stockholders.

CORRESPONDENCE

To Develop Wilkesboro's Resources.

WILKESBORO, N. C., June 29.
Editor Manufacturers' Record:

In keeping with the spirit of development which has marked this section since the advent of the Northwestern North Carolina Railroad, a number of the strongest and best moneyed men and business men of this city and vicinity have organized the Wilkesboro Land & Development Co., with the object of attracting the attention of outsiders to the many advantages this place presents to home-seekers, health-seekers, capitalists and industrial workers. The officers of the company are: President, R. A. Spainhour, of Moravian Falls, Wilkes county; vice-president, I. T. Prevette; treasurer, S. J. Gennings; secretary, D. E. Smoak; directors, R. A. Spainhour, S. J. Gennings, J. T. Ferguson, Dr. J. M. Turner, I. T. Prevette, W. W. Vannoy, W. C. Winkler, W. T. Minton, M. McNeil, C. J. Cowles, J. C. Hubbard, D. E. Smoak. The company's property consists of 232 acres of town-site property, lying on both sides of Main street, west of the courthouse, and includes some of the finest and best located residence and business property in Wilkesboro. The authorized capital stock of the company is \$2,000,000, the charter of the company having been obtained from the North Carolina legislature at its session of 1891. The stock at present, however, has been fixed at \$35,000, all but \$4,900 of which has been subscribed. It is the company's intention to proceed at once to the improvement of the streets and the development of the property, and the most effective methods will be adopted for making the public acquainted with the attractions which this highly favored section of Western North Carolina possesses. Wilkesboro is beautifully situated on a high upland overlooking the fertile Yadkin valley, and between the Blue Ridge range on the north and the Brushy mountains on the south. The situation is most charming as for scenery, and the elevation gives a bracing, healthful atmosphere, whose effects are noticeable in the stalwart frames and sturdy strength of those "who are to the manner born." Here are famous farming and fruit lands, where seventy-five bushels to the acre is no phenomenal yield of corn, and where apples, peaches, cherries, grapes, etc., are grown in absolute perfection. This region is in the remarkable "thermal belt," a section of Western North Carolina where the frost never comes, and where failures of fruit crops are unknown. The mountains hereabouts are filled with minerals—iron of the same quality as Cranberry's famous ores, and gold, silver and other precious metals are found in paying quantities. The timber supply is likewise a great element of natural wealth, and vast forests of almost untouched hardwoods invite the lumberman and wood-worker. Then the water courses, of which there are over 300 miles in this county, afford a wealth of power almost incalculable.

There are springs of nearly all the mineral waters known to this country, enveloped by such picturesque surroundings that they need only to be known to become famous. Some of these, notably the D. E. Smoak springs, contain waters of such highly medicinal properties as to warrant a company in taking hold of them for improvement and development as a health resort and sanitarium. These springs are five miles from Wilkesboro, in a picturesque spot on the top of the Brushy mountains, and with a proper development of the situation would make an ideal mountain resort. They have been visited by numerous capitalists from abroad, and a movement is now on foot to take advantage of their high

virtues and the rare beauty of their surroundings.

In the way of woodworking plants, mills, tanneries, canneries, etc., the field here offers great opportunities to manufacturers. The new company will endeavor to bring these advantages into popular notice, and that an important development of the resources of this region will result from their efforts there is every reason to believe.

A. P.

Industrial Matters in Louisburg, N. C.

LOUISBURG, N. C., June 28.
Editor Manufacturers' Record:

Louisburg, N. C., is not a paper boom town, but moves on with a steady, safe and sure progress, and has made more improvements, as well as done more building, in the past two years than in the twenty years gone by.

Mr. M. K. Pleasants is building a six-room cottage on Main street, in the suburbs of the town. Messrs. J. J. Barrow, Dr. W. H. Nicholson, F. S. Spruill, R. Z. Egerton, H. M. Barrow, W. H. Macon, D. C. High, E. L. Odom, W. K. Martin and G. H. Cooper have recently completed their houses and now occupy them, which are quite pretty and valuable additions to the town.

Dr. J. B. Clifton has remodeled and modernized his dwelling on Main street, and has had built a neat six-room dwelling on Nash street.

Mr. G. W. Ford is now building quite a handsome and commodious residence on Main street, and Mr. A. D. Green is now building a ten-room dwelling on Spring street.

Messrs. W. H. Pleasant and J. A. Thomas are both building on Church street; E. J. Ragsdale is building a six-room cottage on Main street, and F. N. Egerton has contracted for a six-room cottage also on Main street.

Sam Green, Charles Sledge and Isham Green have built very pretty cottages in the suburbs of the town.

Messrs. Egerton & Ford have completed a large three-story brick warehouse for the sale of leaf tobacco.

Col. J. F. Jones has added considerably to Hughes' warehouse, and we have another large warehouse for the sale of leaf tobacco. We have large, well built prize rooms, and with a tobacco market of two years' growth, will handle the coming season one and a-half to two million pounds of leaf tobacco. We have strong warehousemen and good facilities for handling tobacco.

Messrs. Cooper & Timberlake will soon erect two large stores on the corner of Main and Church streets, will need plate-glass front, metal covering and an elevator.

We have two good brick-yards operated by Messrs. Egerton & Ford, and Cooper & Timberlake.

Mr. G. W. Ford has purchased the Ruffin place near the town, which contains several hundred acres of heavily timbered land, and, as he is quite a progressive man, it will soon be converted into money for building and other purposes.

We have fine water-power suitable for cotton factory and other machinery that would be invested with machinery brought in by outside parties; all combined would make a fine opening for cotton and tobacco factories. We need good banking facilities, and do not know of a better or safer investment for several thousand dollars, as the citizens of the town will take stock with the right man. We have the business interests to make a banking business of \$400,000 to \$600,000 a year, and a good banking concern can command, yes all, the deposits of the surrounding country.

Messrs. Egerton & Ford think of putting in ice machinery, and would like to corre-

spond with parties having machinery for such work.

The citizens would also take stock in plants for the manufacture of plug and smoking tobacco and cigars. We invite correspondence from parties who wish to invest in manufacturing interests of any kind. No healthier town can be found in the South, and we are not troubled with the extreme heat or cold.

The Franklin Rifles have just organized with fifty men, and are now preparing for the general encampment of the State Guard. We welcome all newcomers, and will give them a nice healthy locality to live in.

We have a good, live, progressive newspaper, the *Franklin Times*, and a good cotton market, handling 8,000 bales per season.

Messrs. Egerton & Ford have several hundred acres of land lying in and adjoining our town, which is the county seat of the county and on the line of the Raleigh & Gaston Railroad, which is heavily timbered with several million feet of timber containing oak, hickory, pine, poplar, ash, walnut and gum. Said land and houses, or suitable buildings in which to place machinery, would be put in against machinery for factories.

It is situated in the best cotton lands of the South. We will give all encouragement possible to parties wishing to invest in any manufacturing enterprises. Plenty of products raised here to supply factories.

BUSINESS MEN.

Spring Hope's Great Undeveloped Water-Power.

SPRING HOPE, N. C., June 27.
Editor Manufacturers' Record:

Anyone looking for an undeveloped site for an important manufacturing city can find it right here. Some towns are built up chiefly by energy and money; some build themselves because of their natural advantages. When natural advantages, money and energy combine to develop a point the element of uncertainty is eliminated from the future of that place. Spring Hope is fortunate in possessing the latter combination, and that it will cut an important figure in Southern industrial development is seemingly as certain as that this nation will increase in wealth and population; as that the South will continue to attract the attention and means of capitalists; as that North Carolina is going to see her splendid water-powers more generally utilized in the near future for the conversion of native raw materials into manufactured articles.

Happening to be in this section on other business, someone mentioned to me that I would find at Spring Hope a truly remarkable natural situation for a manufacturing town. I came over and looked, and really I am surprised that the opportunities here have been overlooked till recently, even after remembering that North Carolina is as yet but very imperfectly appreciated abroad; is as far from being completely developed as almost any State in the whole Union.

Spring Hope is about twenty miles west of Rocky Mount, the lively manufacturing town which has just been made the grand central division of the Atlantic Coast Line. A branch of this road runs from Norfolk via Rocky Mount to Spring Hope, and will in the near future be extended to Raleigh, giving railway advantages of the first class. It is in the midst of a heavily timbered country, embracing in various nearby sections tracts of yellow pine and large bodies of the valuable commercial hardwoods. For years an important lumber trade has been carried on here, and the pine lumber mills in and about Spring Hope have a capacity of 125,000 feet daily. Cotton is a great staple of the farmers in this section, and many fields reliably yield a bale to the acre. It is also a fine tobacco

section, and, in fact, with the remarkable adaptability peculiar to portions of North Carolina, the soil is suited to nearly every product of agriculture. In addition, the health of the section is of the best, and the grassy knolls and wooded hills which here abound afford abundant sites for picturesque dwelling places and beautiful homes.

Already there is a smart village here, a good lumber market and a growing trading point; but the thing which is going to make this a manufacturing city is the phenomenally fine water-power which is here afforded by a topographical freak—a regular muleshoe bend or loop in the Tar river a mile and a-half in length and only 1,200 feet across at its neck or narrowest place. Furthermore, it is protected by a rim rock twenty-five feet high, giving to this elevated tongue of land absolute protection from overflow, while at the narrowest point there is a draw or ravine along which a canal can be dug at an expense of not over \$3,000, and which with this development will furnish about 6,000 horse-power. I don't remember to have heard of any other place where so great a power could be utilized for so exceedingly small an outlay, where there can be absolutely no damage from high water, where there are so great resources in the surrounding country, and where so many railroad and other advantages are present.

On inquiring as to what plans had been laid to develop and improve this situation, I was informed that Messrs. Campbell & Lyon, the thoroughly wide-awake real estate men who have been most prominently identified with Rocky Mount's present development, have, together with Congressman Bunn, of Rocky Mount, purchased the water-power and much of the adjoining lands, and that they intend developing it on a large scale during the coming year. They have associated with them some Pittsburg (Pa.) men of large wealth, and some time this fall will begin active work on the ground, and after building the canal and laying off mill sites, will energetically seek the location of the various industries which can be profitably run here.

I understand the Raleigh extension of the railroad will run directly through this property, which is about a mile and a-quarter from the present town. The men who have charge of this enterprise are pushers of untiring zeal; they have a remarkably fine situation to develop, and it will behoove all who are looking for a rising manufacturing town to keep an eye on Spring Hope, on the Tar.

ALBERT PENNIS.

Industrial Developments in Anniston.

ANNISTON, ALA., June 21.
Editor Manufacturers' Record:

The Anniston Lime Works, whose works were destroyed by fire a short time ago, have sold out to W. P. Robertson, who will at once erect new kilns and proposes to make the Anniston Lime Works one of the largest in the South. The Anniston lime, although only a short while before the trade, has an enviable reputation all over the South. Their rock near this place is said to be the best in the South for fluxing iron, and supposed to be of quality for fluxing steel.

A development company has been formed here, and 1,000 shares of \$50 each, payable \$1 a month, have been taken by the citizens. The object of the company is to assist and induce small industries to locate or start up here, and the company will furnish one-quarter or one-half interest in any such industries started. All the shares have been taken, the company has been organized, and all is now ready for some small industry to "show its head," and it will be pounced upon like a "duck on a junebug." Yours truly,

VILLA RICA LUMBER CO.

New "Fast Feed" Flooring Machine.

The new fast feed flooring machine shown herewith has been designed especially for fast work and quick adjustments. There is a demand for a machine that is simple of operation and easy of adjustment, one that is able to stand up to any kind of

the way by simply taking out one pin if the operator wishes to look at or sharpen the knives.

The builders especially recommend this machine to all planing mills, large or medium size, also railroad and car shops and others where a first-class machine is wanted for general work on account of its quick adjustments, its simplicity of con-

necting parts, the extension for supporting the table being curved from the opera' or so as to admit of following the work through the cutters.

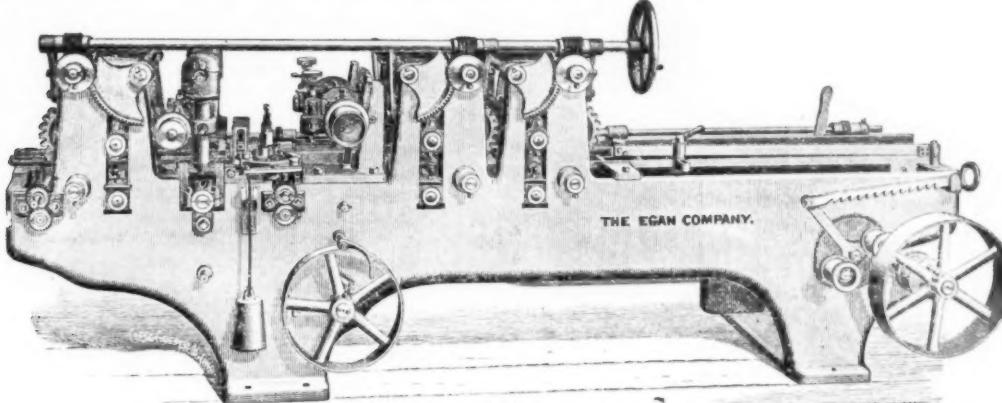
The head stocks are substantial and are adjustably gibbed to the upright framing, and are movable up and down by two screws, so arranged that they may be moved in either direction, both at one

self adjusting to all positions of the belt.

The copes or scribing tools are attached to the main head-stocks, and of course adjust with them, but have both vertical and lateral adjustments independent of the head-stock movements, these independent adjustments being controlled by suitable screws with hand wheels. The cope shafts or spindles are provided with brass steps and are driven by a vertical countershaft with longer belts than usual on such machines.

The cutter-heads are the same as heretofore, the knives being formed so as to have a drawing cut, which are readily ground to the required shape. Sections of fine saws are used instead of spurs to cut the shoulders square, and rarely require attention.

The table is a radical improvement over any hitherto made, and in this lies the chief value of the machine as compared with others. The principle improvement is, of course, the roller bearing, which is constructed on principles well tried on some of our other products. The table must always move square across the ways, because the rollers are connected together and kept square or parallel by a guiding or riding frame. Therefore, if the roll moves at one end it must also move at the other, and hence the whole table must move, no matter where you take hold of it or how much weight is upon it. For instance, a man can sit on the table and the operator could take hold of the outer end of the gauge bar and with two fingers move the table in either direction, and it will go perfectly square across. The rolls next to the cutter heads are grooved and all are protected perfectly from shavings and provided with leather scrapers for removing any accumulating dust. The table is of ample size, quite heavy, so that it cannot spring when clamping the stuff on, and has a traverse movement of thirty-two



NEW "FAST FEED" FLOORING MACHINE

work, such as flooring, patent siding, beaded ceiling, molding and work of that class, doing it perfectly and reliably. Such a machine is presented to the trade here-with.

The frame is made on the most improved plan, being curved and heavily ribbed on the inside, and all parts planed, and when bolted together make a very strong and well-braced frame, capable of withstanding any amount of strain that may be put to it.

The cutting cylinders are made of the best quality of steel and slotted on all four sides, each side having a knife; the journals are very long, of large diameter and revolve in self-oiling boxes which are lined with the best genuine Babbitt.

The feed consists of six feed rolls all heavily geared. The system of gearing on this machine is entirely new, and consists of all the rolls being driven by internal and external gearing without expansion links. Each upper feed roll is made to lift parallel, thus giving a full and even pressure across the board. This is effected by a new and ingenious device for raising and lowering the upper rolls, which can be done instantly to accommodate the thickness of the stock. Each roll is furnished with an improved scraper to keep it free from gum. The two upper front feed rolls are held down by a new weighted equalizing bar, allowing ample lifting range to suit unequal stock.

All three upper feed rolls are made to raise and lower together at one operation by turning a single hand wheel convenient at the operating end of the machine.

The patent pressure bars are of the most improved design, and are made to adjust in and out on each side of the cutting cylinder, giving the machine all the advantages of an inside moulder and enabling the operator to do the very smoothest of work.

The matcher spindles run in long connected bearings, and the matcher hangers have separate adjusting screw and locking device to allow for width of stock to be cut and to insure equal wear on the bed. There is also an arrangement for moving both side heads and long guide together or separately across the surface of the bed from the working end of the machine and without stopping the feed. Adjustable hold-down brackets are provided to hold the stock firmly while matching is being done. The bed plate is made to take out for the purpose of truing-up when necessary.

The independent beader and pressure bar for the lower cylinder are on the most improved plan, and can be swung out of

construction and capability of standing up to the hardest kind of work.

They make two sizes of this machine to work up to nine inches and fourteen inches wide, respectively, either three or four sides, and to work six inches thick.

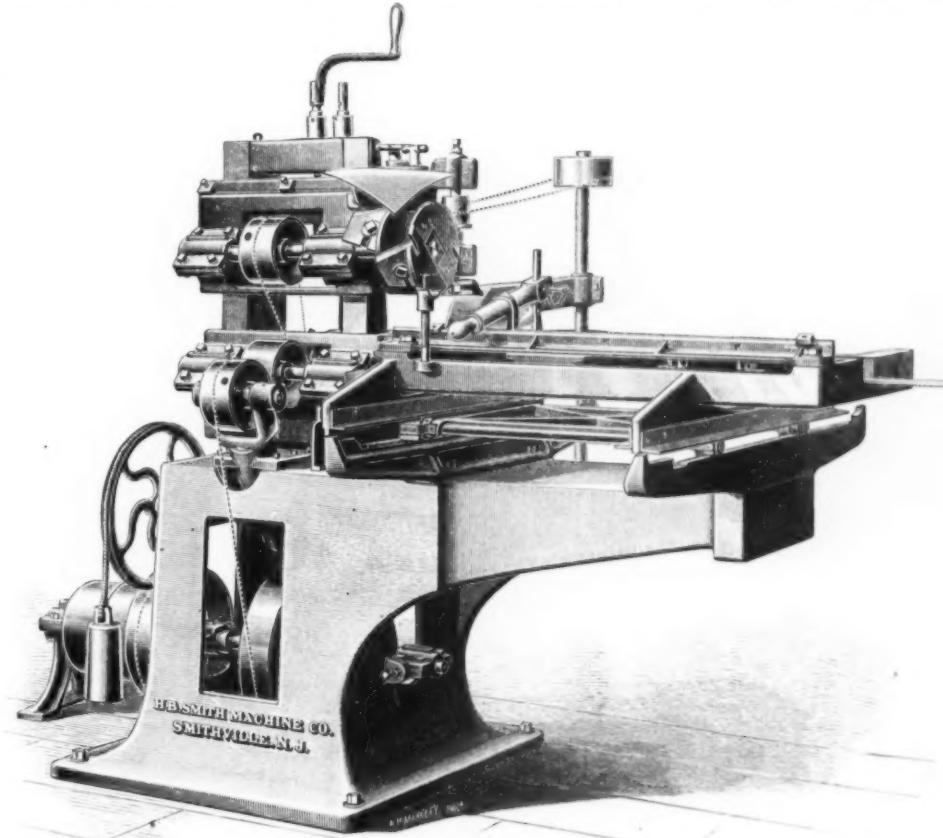
These machines are designed and built by the Egan Co., Cincinnati, Ohio.

H. B. Smith Tenoning Machine.

This new tenoning machine, which is built by the H. B. Smith Machine Co., of Smithville, N. J., is the result of more than forty years experience in the manu-

time or separately as desired, thus perfectly controlling the size and position of the tenon. The upper head-stock with its spindle has a horizontal or longitudinal adjustment for regulating the position of the shoulders of the tenon.

The spindles are made of best crucible steel. Those of the cutter heads are made of 1 1/4-inch steel, and are fitted with adjustable bearings, each five inches long, with ample provision for oiling. They may be fitted with single heads, when they will cut tenons to three and a-half inches long with one operation, or they may be fitted with double heads, when they will



H. B. SMITH TENONING MACHINE.

facture of this class of machinery, and embodies many principles of approved merit. It is especially adapted for tenoning door, sash and blind work, for use in the cabinet department of car shops, and for all general cabinet and joinery framing.

The framing is of iron, massive and pedestal in form, with base wide enough (30x30 inches) to firmly support all pro-

cut tenons to six and a-half inches long, and sixteen inches wide, and the heads and spindles will expand to five inches in thickness if desired, and will also cut the thinnest tenons with equal facility.

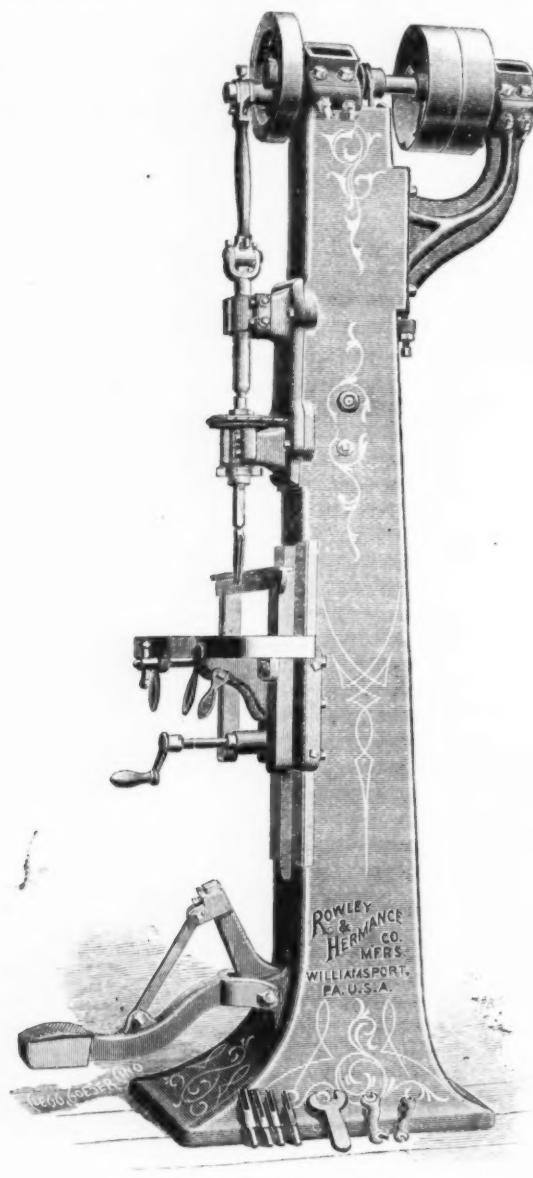
All bearings are adjustable and lined with best Babbitt, and those of the lower shafting are self aligning. The belt compensating tightener of the spindles is also

inches, the roller bearing moving only one-half that distance, of course. The end of the table next to the cutters is provided with a covering that extends below and adjusts to a projection on the ways, so that the table cannot lift up when operating. The ways are substantial and provision is made for supporting the table firmly in all practical positions.

Improved Power Mortiser.

The annexed engraving shows a power mortiser for mortising doors, sash, blinds, furniture, etc. The frame is cast in one solid piece, and the machine is constructed in the most substantial manner, and can be run at a high rate of speed. In the machine illustrated the solid iron frame is extended over the crank shaft, and the patent sliding caps are placed beneath and the wear can be taken up by simply setting up the caps. This is an important improvement and will be readily understood. The machine also has the patent three-part box on the vertical spindle.

The outside of rear bearing of counter-shaft is a heavy, cast-iron arm fitted carefully in a planed seat, and by means of a set screw the back end of shaft may be



IMPROVED POWER MORTISER.

raised or lowered so as to keep the shaft at right angles with the spindle, and is held rigidly in place by four heavy bolts, which allows the Babbitt in the top box to be entirely worn out before rebabbitting. The side wear of the quill box is taking up from the side precisely where the wear occurs.

The bed drops twelve inches, and can be used for straight mortising in the usual manner, and is capable of being tilted to any angle for radial mortising. It is provided with the belt friction reverse, which reverses the chisel instantaneously, whether working or at rest. This reverse motion is acknowledged to be the best in use.

The shafts are all of the best cast steel and the bearings are made very long. The high rate of speed at which this machine is run permits of doing a large amount of

work in a given time. These machines are built by Rowley & Hermance, Williamsport, Pa.

The Prybil Non-Friction Band Saw Guide.

The guide shown in the accompanying illustration is made by P. Prybil, Nos. 508 to 520 West 41st street, New York. With this guide the saw bears against the beveled edge of an anti-friction roller of hardened steel. This roller has a long, inclined bearing, closed at the bottom to prevent the escape of oil. The side-guides are of hardened steel, wide and long, to insure durability and to give a good bearing on the saw to prevent twisting and "running."

The roller can be set forward or back to accommodate the position of the saw on the wheel, and the side-guides can be

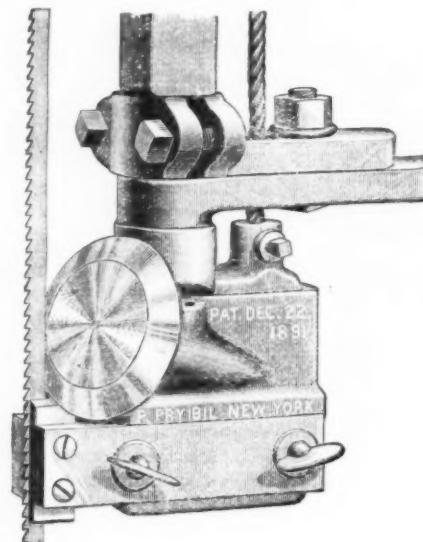
cation, does not require wrenches or screw-drivers to adjust it to different saws, is adjustable in all directions, has wide side-guides to keep the saw from twisting and running, prevents saws from breaking.

The Weir Rail Brace.

We illustrate by cut one of the designs of steel die-formed rail braces manufactured by the well-known Weir Frog Co., of Cincinnati, Ohio. These braces are made of steel plate, and die formed to fit any section of rail. The design here shown is what the manufacturers call their No. 3

& Ohio, Santa Fe, Union Pacific, Northern Pacific, Queen & Crescent, East Tennessee, Virginia & Georgia, Boston & Maine and other large systems. The above roads are model systems in every respect, and the Weir Frog Co. in counting them as patrons for their braces can lay claim to superior merits for their design.

The manufacturers claim that there are now in use by the different roads throughout the country some 2,000,000 of their braces, and we are advised by the Weir Frog Co. that they will take pleasure in sending sample braces to railroads desiring them.



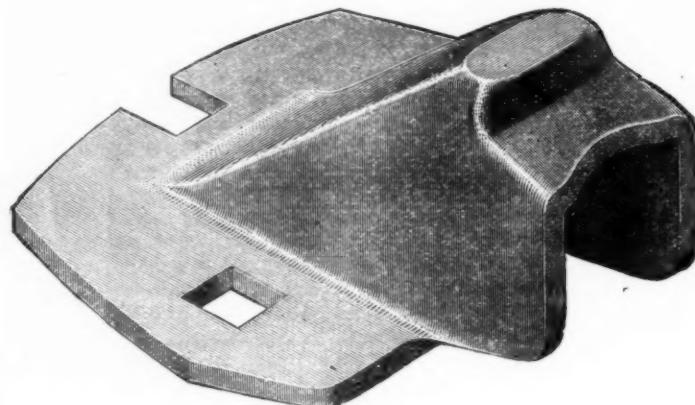
THE PRYBIL NON-FRICTION BAND SAW GUIDE.

brace. This is made of steel one quarter inch thick, though they also make it of five-sixteenth inch metal when so desired. The form of construction of these braces is such that the greatest possible strength is obtained. As will be seen, they are so formed as to furnish parallel vertical sides, and are bridged across where they engage the under and outer side of the head of the rail, thus strengthening the sides, and the vertical sides and shape generally enables them to furnish a rigid and strong brace, and, being of box form, it fits over the spike in the tie. Being made of steel plate, they are practically indestructible. They cannot be broken in spiking, as many of the ordinary cast braces are.

It has become necessary, owing to the

A New Feature in Elevating and Conveying Machinery.

Within the past few years this subject has been one of vital importance to the various manufacturing interests of the country. With the railroad corporations the question of economical coal handling; with the mining interests, rapid and inexpensive appliances for the handling of the various ores; with tanners, for long distance conveying of bark, ground and spent tan; with pulp manufacturers, for carrying their pulp wood from water or cars to piling ground and chippers, for elevating of chips and conveying same to their screens and hoppers; with the lumber and saw mill industries, the hauling of their



THE WEIR RAIL BRACE.

heavier rail now in use generally, and to the increased weight of locomotives and trains, that something more than the ordinary spike should be used to keep track to gauge, and there is nothing better for so doing than rail braces, and they not only do this, but they add to the life of the ties by preventing the rail from cutting down into the ties. No better evidence of the value of the Wier braces can be had than the large use of them by such roads as the Louisville & Nashville, Pennsylvania Co., Chesapeake & Ohio, Rock Island, Illinois Central, Richmond & Danville, Baltimore

logs from the water and conveying the refuse to burners or dumping place, the objection to most of the former appliances has been their excessive cost of operating as compared with the advantages over former methods. The Steel Cable Engineering Co., of Boston, Mass., is meeting with very marked success in the handling of these various materials with its new system of steel cable.

Some of the many advantages of this system over former appliances are the decreased amount of requisite power for operating, the longer distance the material

being conveyed can be distributed over a larger area, conveyors being capable of arrangement at an incline or any angle ordinarily required, greater strength and simplicity and less liability to excessive wear. The application of power with this system can be at either the receiving or discharging end without in any manner affecting the operation of the conveyor.

the screen countershaft at top from the elevator head shaft. When the power is being applied at the foot of the elevator from the crusher driving shaft, the steel cables not only do their work in elevating the material, but also carry the power with them to the elevator head shaft.

The single strand steel cable elevator is found to be very durable in connection

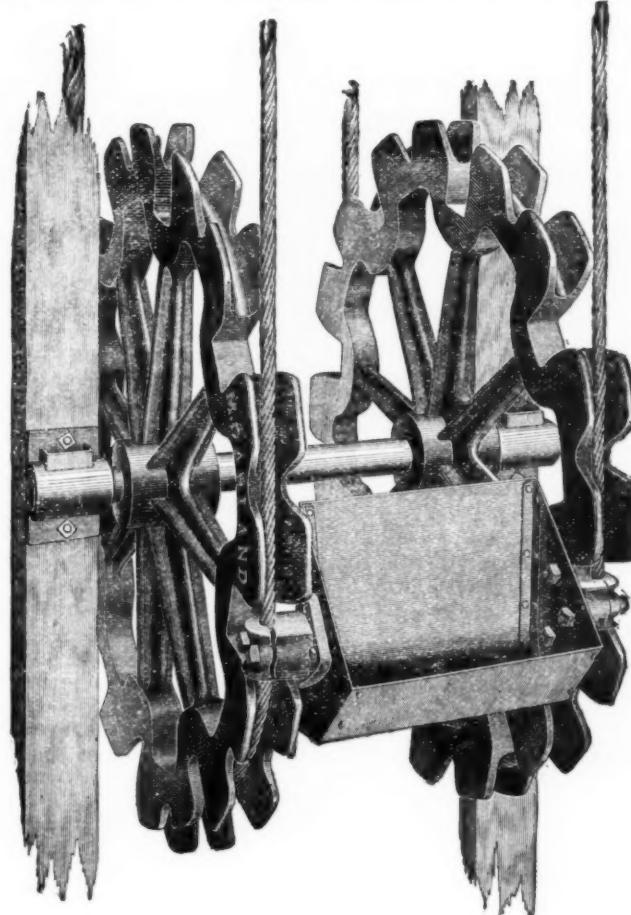
from the chippers it is very much more easily operated, being light and strong, and the long slivers do not adhere to it or wedge at the head wheel. With ground cement, phosphate rock, sand or coke, as there are no joints to hold the cutting material, it outwears many of the other forms of elevator which require a double strand and consequent additional complication of machinery in order to accomplish the same work.

The angle conveyor, shown in connection with the patented cast-iron tube, can be used in the wooden V-shaped trough with iron linings as well for spent tan, chips, anthracite and bituminous coal, ground

Waldron & Sprout Vertical French Burr Mill.

The accompanying illustration shows the Waldron & Sprout vertical French burr mill now manufactured by Sprout, Waldron & Co., Muncy, Pa., successors to Waldron & Sprout, with new improved horizontal vibrating feed. These mills are made in five sizes, viz., twelve, sixteen, twenty, twenty-four and thirty inches.

The vertical mill has been greatly improved in the last eight years by the above firm. They attribute their success largely to the fact of having erected a grist mill in connection with their plant to test their



DOUBLE S RAND CENTRALLY HUNG BUCKET ELEVATOR.

The length of these conveyors can be almost indefinitely extended. The sprocket cable wheels are made with chilled wearing surfaces, and are so designed that they can be reversed when the parts coming in contact with the steel cable have become worn, thus giving an entire new wearing surface. In the transmission of power the transmitting clamps, being spaced upon the cable at intervals to correspond with the gaps in the wheels, give a positive motion. The company has several of these power transmissions operating with satisfaction.

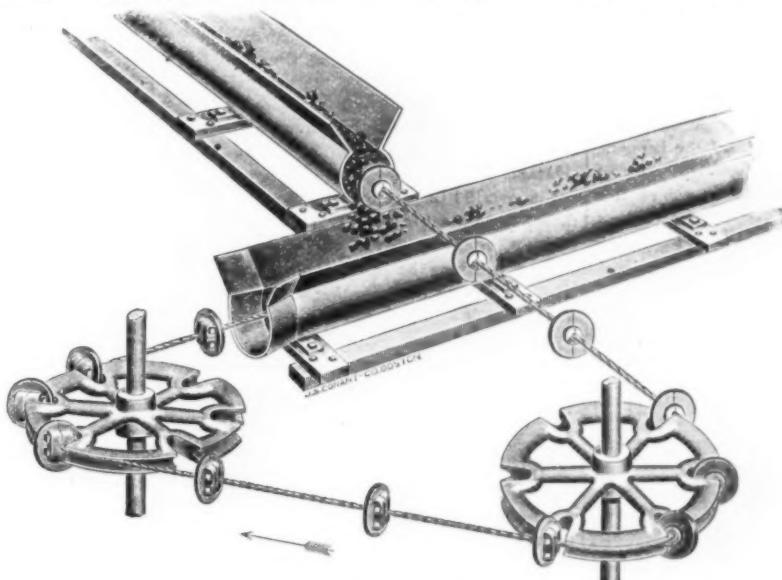
Their double strand centrally hung bucket elevator is especially adapted to the elevating of hard, soft and pebble phosphate rock, burnt cement, ores, broken stone, lump sulphur, pyrites and other coarse material. The pebble phosphate rock comes from the mines in cars to be washed or freed from the clay and sand, the contents of car being flushed from it into the pit or hopper at the top of the elevator, whence it is received by the buckets and elevated to the washer above. The clay, sand, etc., with which the rock is mixed, having become separated or loosened from the rock by the flow of water used in freeing the car from its contents and being agitated by the buckets in elevating is the more thoroughly and rapidly cleansed on entering the washer, and the consequent greater number of cars can be washed per day than with other methods, and with better results in the condition of the rock for drying. In elevating the broken stone and ores from the crusher to the screens this form of elevator is more serviceable, having fewer wearing parts exposed to the action of the dust and cutting particles formed by crushing the material, and at the same time admitting of the drawing of

with crushing appliances, where other forms of bucket elevators have proved ineffectual, working satisfactorily with either malleable iron or steel buckets. This elevator works perfectly driven from the boot or foot, a very important factor in many instances, having no tendency to

overflow when conveyor is not uniformly fed, and in a series of continuous conveyors lessens the tendency to settling back of the material when conveyor is inclined. The cast iron tube being made in sections is the more easily removed or

mills and other machinery, and to do a general milling business. This enabled them to discover all weak points and remedy them.

At the time this firm commenced building fast running vertical mills they claim that others who preceded them had made their frames too light, bearings too short, the runner stone imperfectly attached to the spindle, the shells poorly joined together, great trouble in heating of the end of the spindle at the pressure end, imperfect feeding devices, etc. All these points have been fully remedied and protected by them. They use a ball bearing on the pressure end of the spindle, which does



STEEL CABLE ANGLE SPROCKET CONVEYOR.

buckle or gather at the foot wheel, as is the case with chain, and relieving the understrain upon the boot. Various diameters of cable may be used according to the distance between centers, nature of the material being elevated or other requirements.

In elevating chips to the screens above

replaced, and is made correspondingly heavy where wear is most likely to occur.

THE Gracey-Woodward Iron Co., of Clarksville, Tenn., is about ready to blow in its new furnace. Its ore washer has been completed and a large supply of coke and ore is now being laid in.

away with any possibility of heating, and attach the runner stone to the spindle by a tapered steel sleeve and nut, avoiding the liability of the runner moving on the spindle and thereby becoming out of face.

In the manufacturing of these mills the builders have considered first the utility

and durability, and second the cost. The large increase in their business is an evidence of the popularity of their mills.

We learn that they have obtained the exclusive use of the Sturtevant emery rock burrs for vertical mills, and that they have built a special mill for their use, which is

water, carbonic acid nor sulphur. Either of these three will corrode steel. On the New Jersey flats, not far from New York city, there have been hundreds of millions of sewing machine needles made, and for years the greatest "unmechanical" difficulty was to keep the bright finished pro-

when cut. Where one of the screws is left-handed it may be cut in another lathe which will vary from the first, but it is more likely that it will be made in the same tool. Ordinarily in practice a left-handed screw is taken off the opposite side of the lead screw from that used for the right-handed one, and the whole train of action is reversed, with numberless small variations toward error, in addition to that of expansion by heat. It is fair to say, however, that better elevating screws for planer rails can readily be made, and will be furnished whenever users understand their necessity and demand them from the builders.

AN employer must not consider that the care a workman takes of his personal appearance is subtracted from his attention to his shop duties. This care is due, on the contrary, to a habit of being particular about details, careful of getting the greatest effective results from the conditions and circumstances in which he finds himself placed, to the economical use of the materials at his disposal. And this habit of carefulness is taken into all his duties. It will occur to every employer that this habit is a valuable one to be possessed of, either by the head of a concern or by his subordinates. Hence it should be encouraged where it exists, and the person to whom it belongs should be placed where this quality may be made to bear the greatest fruits for the establishment that employs him.

WORKMEN appreciate good treatment, and will strive to retain their situations in shops where they are well cared for. The writer once was hired by a man who, when asked where clothing could be put in working hours so that it could be kept clean, bellowed out, "If you have clothes too good to work in don't bring them in here, we have something else to do here besides minding coats." In that shop it was the custom for men to go home with their faces and hands as dirty as they got by labor. It was said that in the case where a workman brought a pail into that shop to wash himself in, the boss kicked it over, remarking that he would tolerate "no frills" by any man who considered himself better than his associates. The writer did not begin to work in that shop, but in the very next place he did work in there was a closet, or locker, for each man between the windows, and hooks within it to hang a number of garments on. Beneath this locker was a tool drawer with tills and partitions, and there was a good lock and key for both. Beneath the bench was a swinging bracket to support a water pail and soap shelf. This permitted the pail to swing out and in as desired, and was so high above the floor that no stooping was necessary in washing. The sweeper emptied, scoured, and refilled the pails each session. It was the custom for workmen in the shop to change coat, vest, hat and trousers every morning and night, and when these men and boys went home they looked as well and as neat as the men from the office. Now all the good workmen and decent boys who did not work there wanted to, and those who did were careful to keep their situations, which means that they did the best work they knew how, and plenty of it.

A VERY little thing in a lathe where a screw is being cut will cause one screw to be shorter in the pitch than another. In making two screws, if the dead center in one be set tighter while the thread is being cut than it is in the other, the greater friction will develop heat and elongate that screw. This effect is so great frequently as to be seen in the cutting of it. One side of the space in a square thread will gradually recede from the tool; the calipers will show that the thread is thin on the tailstock end, and the space at that end is wider than it should be, except at the bottom. Hence it is obvious that a screw cut warm will on one side at least of its thread be shorter when it becomes cold than one that has not thus been heated

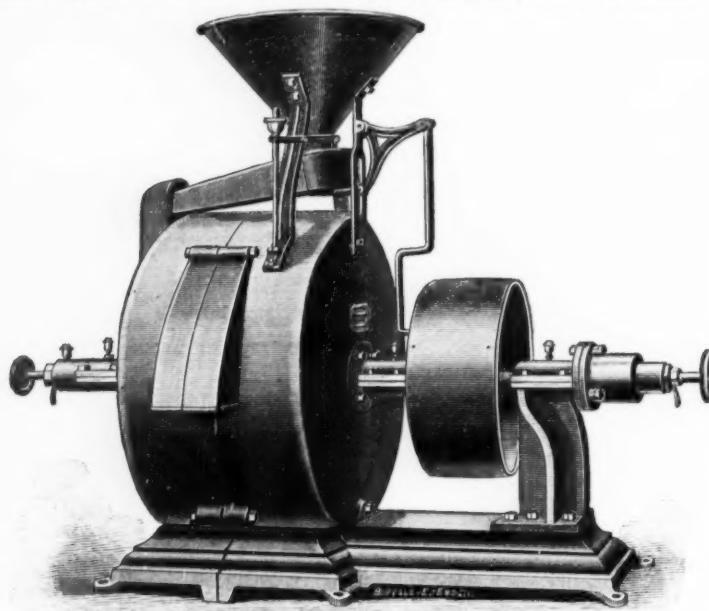
of tricks due to reflection and refraction. But if there be laid on the piece being inspected three or more narrow strips of paper, each of the same exact thickness, and these strips be laid across under the straight-edge, the test can be determined to the limits of the variation there is in the thickness of these strips of paper. If there be three strips of paper, and one be laid under each end of the straight-edge, and the third under the middle, then, if they are all pinched at once, the piece being inspected either is straight or the papers have differing thicknesses. To determine this last point exchange the middle strip for an end one and then, if the same result is indicated, the fact that the two strips of paper which have been exchanged are of the same thickness is proved, but nothing more. Again exchange the present middle strip with the end one that has not before been disturbed; if then the result be the same, the piece being inspected is straight and the papers are of the same thickness. Of course it is obvious that a micrometer caliper, if at hand, will easily determine the comparative thicknesses of the paper without the necessity of the exchanging of one strip for another. It is well, however, to know this means of proof.

IN the grinding of a diamond pointed turning tool the line of the top edge should be made of such an angle with the blade that in setting it to cut in a lathe this edge shall lie on its whole length approximately in the radial plane of the piece of work it is cutting. In other words, this edge, if extended inward, should cross near the center of the piece in operation. If this angle be made sharper it will not cut any better and it will not keep sharp as long. If it be made more obtuse it will not cut so freely; the friction of the chip on the surface being turned will be very great, and the tool will not keep sharp any longer than one with the radial edge. In a planer tool the lip should be made parallel to the shank of the tool, then it will stand square with the plane surface of the platen. The cutting angle of a tool may be about 45° with the blade.

THE process of sharpening files by means of acid has become quite an industry. The process consists in taking old files and first cleansing them by dipping into strong caustic soda one or more times and rubbing to free them from grease. They are then washed and suspended in a solution of dilute nitro-hydrochloric acid for a few moments. When taken out they have a black color partly from the carbon freed in dissolving the metal. They are then washed in warm water, dried and rubbed with a wire brush, which gives them the appearance of being new. Files so treated are fully equal to new ones, as the acid does not injure the quality of the metal in the least. This work does not require any expensive apparatus, and is something which could be profitably introduced into town or cities by the machine shops located there.

THE Canton Co., which held its annual meeting on June 8th in Baltimore, Md., is steadily pushing forward in the development of its land lying between Baltimore and Sparrow's Point. The growth of manufacturing interests in Baltimore has been quite remarkable of late, and Canton, lying between the city and the large works of the Maryland Steel Co., offers special inducements to manufacturers.

THE British Steamship Snilesworth cleared and sailed Saturday from Port Tampa for Stettin, Germany. She took out the largest cargo of phosphate which has yet been shipped from that port, 2,600 tons, from the mines of the French Phosphate Co., near Ocala.—*Pensacola News*.



WALDRON & SPROUT VERTICAL FRENCH BURR MILL.

especially adapted for grinding cement, phosphate, paints and all other hard substances.

Notes on Machine Shop Practice.

By Albert D. Pentz, Consulting Engineer.

THE time has come to begin to have hollow line-shafting. There is plenty of hydraulic steel pipe made that is lapwelded, and which is practically as strong torsionally as solid cylinders of the same diameter, and there is a saving of about 30 per cent. in the weight. This pipe does not cost greatly more than solid bars of equally good stock, and it may be sized and polished at no greater expense. There may be difficulties to be overcome before this pipe can be "cold rolled" to exact size, but these difficulties in hydraulic pipe should not be insurmountable. The benefit to be derived from this hollow shafting is from its lightness, for it will be seen if one-half the power developed in an engine is sometimes consumed in friction before it reaches the tools, and if the greater part of this friction is due to weight and other strains within the boxes of the hangers, etc., that any considerable lightening of that weight will materially reduce this friction and save power. Hence, if a hollow shaft should be made light enough to save 4 per cent. of the loss due to friction, which in some cases is 2 per cent. of the power developed, it will pay to do it, even if the first cost is considerably increased.

AN editor in the hardware department of a great trade paper asks for a means to protect bright steel surfaces from rust due to sea air. He evidently believes that shellac—varnish, I suppose—will be efficacious. Shellac varnish, however, will be found worse than nothing unless applied when the metal is warm, which ordinarily is an impractical thing to do, and it could not be satisfactorily removed from cutlery when necessary if it was practical. Thin lacquer will adhere a short time to cold metals, but because alcohol always contains water which evaporates with it in drying, the surface beneath the lacquer will become more rusty than it would if left bare. Hence shellac is out of the question, unless its advocate is aware of a practical solvent that contains neither

duct from rusting. This will be accepted as a parallel case, for it was the humid sea air that did the damage. Every kind of ordinary means that was thought of was tried for this, but nothing was found which prevented the fault for many years. Even paraffine could not be relied on, probably because it could not be applied with certainty over the whole surface. When every other cure had failed someone thought of prime neat'sfoot oil. It was tried and cured the evil entirely. It will cure the hardware man's rust also, and when he wants it taken off he can wipe it off and not have to dip it in caustic potash, as he would if his goods were overcoated with lacquer. It may be that the gelatine in this peculiar product has a greater affinity for water than the steel has.

MACHINISTS who operate planers do not as a rule know it to be a fact that not one planer in one hundred lifts its rail to all heights parallel to the platen. The cause of this is that the two elevating screws are very seldom of the same pitch precisely. Hence, when a piece of work has one plane surface made on the planer at a low elevation and another similar surface at a considerable height from it, they will probably not be parallel to the other. This defect is so great in some cases as to seriously affect the quality of the work done in the shop where the tool is used. Planers which have one rail-elevating screw with a right-handed thread, and the other with a left-handed one, generally have this defect to a greater degree than where both are cut alike.

A VERY little thing in a lathe where a screw is being cut will cause one screw to be shorter in the pitch than another. In making two screws, if the dead center in one be set tighter while the thread is being cut than it is in the other, the greater friction will develop heat and elongate that screw. This effect is so great frequently as to be seen in the cutting of it. One side of the space in a square thread will gradually recede from the tool; the calipers will show that the thread is thin on the tailstock end, and the space at that end is wider than it should be, except at the bottom. Hence it is obvious that a screw cut warm will on one side at least of its thread be shorter when it becomes cold than one that has not thus been heated

THE sense of touch is a mechanic's conscience. In caliper fine work this sense becomes so delicate that differences less than the tenth part of one-thousandth of an inch are as apparent as the inch itself. In testing anything with a straight edge the eyesight is very deceptive factor in the proof, because no one can tell whether an error is one or two-thousandths of an inch. If the surface being tested is a bright one it will look to be more open in a strong light than in a shade, and the judgment will be the victim of all manner

IRON MARKETS.

Philadelphia.

[From our own Correspondent.]

PHILADELPHIA, June 29.

The first half of the year draws to a close with the iron market in an unsettled and unsatisfactory condition, with many of the furnaces offering special inducements to effect sales and with buyers holding off in the expectation of being able to do better during the next few weeks. The waiting policy pursued by consumers of pig iron cause some of the weaker producers to make all sorts of propositions to secure orders, and as a result there are rumors of sales at prices below anything previously reported. The trouble with the manufacturers of well-known and favorite brands does not seem to be so much the want of activity in the demand as the unsatisfactory character of the prices they are compelled to accept. Most of the older concerns have a regular line of customers for the larger part of their current production, but these works are of necessity compelled to recognize the low prices quoted by other furnaces producing a fairly good grade of iron and in a measure meet this competition in order to retain their trade. While there is practically no change in the general condition of the pig iron market, there is undoubtedly a better feeling manifested by producers of crude material in regard to the future. This may be due to the increased demand that has been noted in the finished iron and steel trade, which, in a measure, reflects itself on other branches of the trade. For the leading brands of pig iron prices are practically unchanged. Sales of ordinary iron have, however, been made in this market at from seventy-five cents to \$1 below the quotations given, the rates named depending on the character of the order, the maker and the time of delivery. For the general run of business the following quotations are asked:

Standard Pa. No. 1 X.....	\$15.50@16.00
" No. 2 X	14.50@15.00
" Forge.....	13.50@14.00
Southern Coke, No. 1 foundry.....	14.75@15.25
" No. 2	14.00@14.50
" Gray Forge.....	13.25@13.75

Pittsburg.

[From our own Correspondent.]

PITTSBURG, June 29.

The past week has been one of considerable excitement in iron and steel circles, particularly in this region, on account of the negotiations between the manufacturers and workmen, but it is now clearing away. At one stage there was every indication that a complete cessation of work would take place and make the iron trade a nightmare, but the situation is much better to-day, and even if trouble does develop in the places not yet made secure, it will not be so bad nor so extended as at first seemed likely to be the case.

The general trade has not been so bad during the week as was expected, and through all the excitement pig iron has held its own. Prices have not improved except on Bessemer, which is very solid, slightly above \$14, which it has held for some weeks. Although there are sales made at that figure, it is no longer universal, as several firms are declining offers of \$14.00. The demand, too, has picked up to a gratifying degree, and there seems but little doubt now that a stronger tone will appear in the several lines. For forge and mill iron the demand has been quoted good, but prices still hug the rock-bottom notch. The one thing now that is doing much to remove the death-like appearance from the pig market is the complete confidence that prevails. This has made its appearance at a discouraging time and had a wonderful effect. The suspicion that has been held for so long that with the tumbling in prices it was unsafe to do business on a progressive basis, as no one could be sure

that the succeeding day or week might not see a further fall, has about disappeared. There is a conviction that the prices having stood the test of the past few weeks without the awful fall that might have taken place, that they are as far down as they will go. It is this that has braced up the market and put a little life into Bessemer. It is quite safe to say that the next few weeks will see that grade in a much higher place than it is in now. The quotations still show it at \$14.00, but a better rate is being secured right along. The prices are:

Gray Forge	\$12.60@12.75
Mill Iron	12.75@13.00
Foundry No. 1.....	14.35@14.60
" No. 2	13.35@13.60
Bessemer	14.00@14.50

Wheeling.

[From our own Correspondent.]

WHEELING, W. VA., June 29.

It is indeed hard to find any good reason for feeling elated over the condition of the pig iron market in the Wheeling district, for, that matter, over the condition of any branch of the iron and steel trades. Prospects are a little better for an early settlement of the wage differences between the workmen and their employers, and the early resumption of the mills will help to keep down the ever-increasing over supply of raw iron, but will not keep even with it by any means. It is a fact beyond question that many furnaces are and have been putting up their product as surely for money to be used in producing more iron, and at rates that do not show well for the confidence felt by lenders of money in the permanency of the values of pig iron. There is but a very small margin at this time between the selling price of Bessemer and the actual cost of production, and this difference seems to be growing less continually. Sales are being made for delivery well along toward the end of the year, and the rates obtained are not satisfactory.

Aside from blue-book transactions that will not realize cash for the sellers for a long time to come, very little is doing now. Foundry irons are selling a little better than forge and Bessemer, but there is not much of an encouraging character in even that demand. Prices are about as last quoted, except for some minor changes:

No. 1 Southern Foundry.....	\$14.25@14.50
No. 2 Southern Foundry.....	14.00@14.25
Gray Forge.....	12.75@13.00
No. 1 Valley Iron.....	14.25@14.75
No. 2 Valley Iron.....	14.00@14.50
Bessemer.....	14.00@14.25

Cincinnati.

CINCINNATI, June 25.

The buying for the past week has been on a larger scale than for many weeks previous. The orders taken in this market since the 18th will aggregate something over 20,000 tons. This has come largely from leading agricultural implement makers, and has been distributed generally through Southern coke irons, Ohio brands and Lake Superior charcoal. Southern coke irons, however, took the bulk of the tonnage. Deliveries in most cases run to the end of the year. The competition of the larger business was very close, and quoted prices were shaded somewhat.

Some surprise is expressed that in the face of favorable underlying conditions all along the line the market for pig iron still remains weak and unsettled. While an advance is fully expected by most furnaces before the end of the year, nevertheless there is great competition for orders running six months ahead and at present prices. It has been noted that changes in the market usually comes at unexpected times. On this ground there are those who think that the present season of discouragement and distrust is a pretty sure sign that a reaction is near. It is pretty certain things cannot go on indefinitely as they are, for it is well known that stocks are being reduced; that many furnaces cannot realize cost on the present market, even after the most rigid economy and reduction of cost have been put into effect.

This general view of the situation has led to some inquiry from investment quarters, and some sales of size have been consummated, taking the iron off the market until better times. It is rumored that 30,000 tons of furnace iron will also be put into storage to await an improvement in the market.

The wage matter being unsettled lends uncertainty to the operation of rolling mills and adds weakness to the market for gray forge irons. In car-wheel irons there is more than the usual quiet, but with malleable works there is general activity, resulting in the closing of large transactions each week. It is understood that most of the malleable concerns have pretty fully covered their wants for the coming season.

We quote for cash f. o. b. cars Cincinnati:

Southern coke No. 1 foundry.....	\$13.50@14.00
Southern coke No. 2 foundry and	
" No. 1 soft	12.50@13.00
Hanging Rock coke No. 1	16.00@16.50
Hanging Rock charcoal No. 1	19.75@20.00
Tennessee charcoal No. 1	16.75@17.00
Jackson C. stone coal No. 1	16.50@17.00
Southern coke, gray forge	11.50@12.00
Southern coke, mottled	11.25@11.75
Standard Alabama C. W.	16.00@16.50
Tennessee C. W.	17.00@17.50
Lake Superior C. W.	17.50@18.00

ROGERS, BROWN & CO.

St. Louis.

ST. LOUIS, June 25.

The past week has developed no new feature in our local market. Purchases for current requirements continue on a moderate scale at previous prices, but consumers appear indifferent to offers for later deliveries, arguing that they will do better by waiting.

Most of the furnaces are indisposed to make any concessions below present prices, consequently parties are only buying as their needs actually require. They then want it shipped by fast freight and delivered at the earliest possible moment.

We quote for cash f. o. b. cars St. Louis:

Southern Coke No. 1 Foundry.....	\$14.25@14.50
" No. 2	13.25@13.50
" No. 3	12.75@13.00
Gray Forge.....	12.25@12.50
Charcoal No. 1	16.00@16.50
" No. 2	15.50@16.00
Missouri Charcoal No. 1	14.50@15.00
" No. 2	14.25@14.50
Ohio Softener.....	17.00@17.50
Lake Superior Car Wheel.....	18.00@18.25
Southern " "	18.75@19.25
Frick's Connellsburg Foundry Coke	12.50@13.00

ROGERS, BROWN & MEACHAM.

Buffalo.

BUFFALO, June 25.

During the past week several large contracts have been placed for extended deliveries, both for foundry and malleable irons. Prices were low but firm.

Considerable interest is being manifested by buyers in the future of the market. In fact, salesmen are now more frequently met by questions as to the outlook than for many months. The general situation is exceedingly quiet with a curtailed consumption as well as production.

We quote on the cash basis f. o. b. cars Buffalo:

No. 1 X Fdy., Strong, Coke Iron, Lake Superior ore	\$12.00@12.50
No. 2 X Fdy., Strong, Coke Iron, Lake Superior ore	12.25@12.75
Ohio Strong Softener No. 1	14.25@14.75
Ohio Strong Softener No. 2	14.00@14.50
Jackson County Silvery No. 1	17.00@17.50
Jackson County Silvery No. 2	16.00@16.50
Lake Superior Charcoal	17.00@17.50
Tennessee Charcoal	17.00@17.50
Southern Soft No. 1	14.25@14.75
Alabama Car Wheel	19.00@20.00
Hanging Rock Charcoal	17.00@17.50

ROGERS, BROWN & CO.

Louisville.

LOUISVILLE, June 25.

There has been no improvement in prices and considerable difficulty in placing iron. Furnaces are willing to sell for deliveries throughout the year at current figures, and are not hopeful for an advance. The expected action of the Pennsylvania furnaces in further reducing prices in Central Pennsylvania and New England, together with low offers of Virginia irons, does not lead Southern furnaces to expect much assistance from that territory, and it is probable that sales of their iron there

will be temporarily curtailed. The encouraging feature of the situation is that there will be no trouble between manufacturers and the Amalgamated Association, and that increased buying will follow the settlement of this question, as unquestionably many orders have been held in abeyance awaiting the settlement of this question. The indications of another heavy crop are such as to promise excellent business in the West, and it is felt that in the event these expectations prove true the iron interest cannot but be benefited in the increased prosperity that will follow.

We quote for cash cars Louisville:

Southern Coke, No. 1 Foundry.....	\$13.75@14.25
" No. 2 "	12.75@13.25
" No. 3 "	12.00@12.50
" Gray Forge.....	11.50@12.00
" Charcoal, No. 1 Foundry	15.75@16.25
" Car Wheel, stand. brands	18.00@19.00

GEO. H. HULL & CO.

Chattanooga.

[From our own Correspondent.]

CHATTANOOGA, TENN., June 25.

The condition of the iron market in this section has changed very little in the past week. The demand is fair, but prices remain unchanged. We quote merchant bar iron at 1.55 to 1.60 cents, half extras, f. o. b. mills, sixty days' acceptance, or 2 per cent. off for cash; from store 1.75 to 2 cents. Pig iron quotations are unchanged. We quote:

PIG IRON.	
Southern Coke No. 1 foundry	\$12.00@12.50
" No. 2	10.75@11.50
" No. 3	10.50@10.75
" gray forge	10.00@10.25
" No. 1 soft	10.75@11.00
" No. 2 soft	10.25@10.50

Four months' acceptance or 8 per cent. per annum for cash.

LUMBER MARKETS.

New York.

OFFICE OF MANUFACTURERS' RECORD, NO. 126 Liberty Street, NEW YORK, June 22.

This is indeed a dull market, and to make it still more aggravating the labor troubles still continue, with indications that they will spread. There is, perhaps, no other industry which is afflicted as is lumber. If the granite cutters have a strike it stops building. If the brick men or the iron men or the plasterers or the hodcarriers have a strike and cannot win by their own strength, the others are called out and the work stops, and this, more than anything else, hurts the lumber business.

Yellow pine is extremely bad off, and could not serve worse than it does at the hands of its friends. To illustrate its sad state, attention is called to a Brooklyn order for 2,000,000 feet which was recently given out. Something like one half of this was big square timber from thirty to sixty-five feet long. This order was taken by one of our largest dealers at \$22 per thousand delivered at the building where it is wanted. The haul is about one and a-half miles. Everybody knows that this big lumber cannot be loaded from the vessel to trucks and unloaded again at the building for less, counting wharfage, than \$3.00 per thousand, and we doubt if this would cover it. After deducting freight and seller's profit, etc., what does it leave for the mill? How much better it would be to let the timber remain on the stump than to have it sacrificed like this, and no one out of all who handle it receive a dollar's benefit from the slaughter but the rich corporation whose building it went into.

This business must be stopped or it means ruin to the mill men. There is only one way to do it, that is, by thorough organization.

I renew quotations, but again warn your readers that they are to a large extent nominal:

Building orders, 12 in. and under.....	\$19.00@20.00
" 14 in. and up.....	19.00@20.00
Yard orders, random.....	17.00@18.00
Ship stock, 4 ft. average.....	22.00@23.00
Heart face siding, 1 and 1 1/4 in.	18.00@19.00
1-inch wide boards.....	21.00@22.00
1/2 and 1/4-inch wide boards.....	22.00@23.00

MANUFACTURERS' RECORD.

Kiln-dried sap swing..... 15 00@ 16 00
Rift-sawed flooring, rough cargo lot 36 00@ 38 00
" tongue and grooved, in
carload lots..... 40 00@ —

North Carolina pine is rather slow of sale. Box, perhaps, suffers more than any other grade. We are of opinion that the uses to which this grade is put might be much further extended, and this is a matter that should receive careful consideration.

SOUTHERN HARDWOODS.

There is a better feeling in the hardwood market, and the prevailing opinion seems to be that the improvement will continue and become more noticeable as the fall approaches. The cabinet-makers' strike or lockout is not settled, but as it continues it becomes more and more apparent that the strikers will ultimately get beaten. Already some of the shops are running with part of a force, which will grow larger as time advances.

There is a scarcity of dry poplar, while the demand is fairly good. This is a grand time for the manufacturers to get together and establish prices again. Why is it that this wood should go so cheap? Simply because the manufacturers go around, theoretically speaking, cutting each other's throats.

Good walnut finds ready sale, and the market would eagerly take a large amount of export stock.

Cherry is good stock; about all there is seems to be in the hands of a few men. Holders should keep a stiff upper lip and not cut prices to make sales, for it is not necessary; cherry will sell itself this year.

Quartered oak is in very light demand for rejects and culls, but good stock is in steady, though at the present time not over large demand.

Plain oak is in good demand and good character dry stocks sell easily.

1x6 inch and up..... \$49 00@ \$50 00
Thicker..... 50 00@ 53 00
Common..... 35 00@ 38 00

There is very little call for common and none to speak of for culls. Plain oak is also slow of sale.

1x8 inch and up..... \$35 00@ \$36 00
1½ and **1¾** inch and up..... 36 00@ 38 00
2 inches..... 37 00@ 39 00
Export oak..... 32 00@ 34 00

Ash is quite scarce, but the demand is steady, except it may be for some special sizes. The prices are as follows:

1 inch..... \$35 00@ \$37 00
1½, **2** and **2½** inch..... 37 00@ 40 00
2½, **3** and **4** inch..... 38 00@ 41 00
Common..... 22 00@ 24 00
Balusters..... 22 00@ 26 00

Geo. Hagemeyer, one of New York's most successful hardware dealers, has gone home since our last. He was well known to the mill men of the country, and was much esteemed by all who knew him.

Reports seem to indicate that there will be a scarcity of dry stocks in hardwoods this fall, and if this be true, there is no necessity for leaving the market, even though it is dull. Take the MANUFACTURERS' RECORD's advice and hold on. You will make money by it.

Baltimore.

OFFICE MANUFACTURERS' RECORD,
BALTIMORE, June 30.

The volume of business in the local lumber market during the past week shows but little increase, and the usual quiet tone at this period of the season is apparent. There is, however, a steady tone in values, with a corresponding demand for certain woods, and, on a settlement of labor difficulties, a general quickening of trade would likely occur. Receipts of Virginia and North Carolina pine for the week have been moderate, and values about steady, but for choice merchantable lumber of certain dimensions a shade firmer. Cypress is quiet and steady, with a fair inquiry, especially for No. 1 grade. In hardwoods the movement is of a light character and the demand limited to medium-sized lots, while prices throughout the list are steady. White pine is in fair demand, with no change in values. In the fancy woods,

such as walnut, oak, ash, poplar, etc., there is very little doing. Furniture manufacturers are doing very little, their season being over. From other sources the inquiry is very limited, and some weeks will elapse before a very active trade can be reported. The supply of lumber and timber in all the yards is good, and all varieties of woods of good selections and dimensions can be obtained. A good demand is current for shingles, and for all choice makes values continue firm. Laths are steady, with a fair supply and prices unchanged. Receipts for the month of May per Northern Central Railway were 2,160,000 feet of lumber and timber. The Merchants & Miners' Transportation Co. received during the month of June 123,952 feet. The following list represents the prices current at this date:

VIRGINIA AND NORTH CAROLINA PINE.	
5x10 and 12 No. 2, kiln dried.....	\$16 25@ \$6 75
4x10 and 12 No. 1, " "	19 25@ 19 75
4 wide and narrow edge, No. 1, kiln dried.....	16 75@ 21 75
4x8-10 and 12, No. 1, kiln dried.....	22 25@ 22 75
4 No. 1 edge flooring, air dried.....	15 00@ 15 50
4 No. 2 edge floating.....	12 50@ 13 00
4 No. 1 12-inch stock.....	—@ 16 50
4 No. 2 12-inch stock.....	13 50@ 14 00
4 edge box or rough wide.....	9 50@ 10 00
4 edge box or rough (ordinary widths).....	8 50@ 9 50
4 edge box or rough (narrow).....	8 50@ 8 50
4x12 edge box or rough.....	10 50@ —
3 narrow edge.....	7 00@ 8 00
3 all widths.....	8 00@ 9 00
3x16 wide.....	9 00@ 10 00
Small joists, 2½-12, 14 and 16 long.....	8 50@ 9 50
Large joists, 3-16 long and up.....	9 00@ 10 00
Scantlings, 2x3-16.....	9 50@ 10 00
" 2x4-16, 18 and 20.....	9 00@ 10 00
" 3x4-16, 18 and 20.....	9 00@ 10 00
6-4x12-16.....	10 00@ 10 50
8-4x12-16.....	10 00@ 10 50
6 4x10-16.....	9 50@ 10 00
8-4x10-16.....	9 50@ 10 00

SOUTHERN PINES.

Siding and edge boards..... \$13 50@ \$15 00

Heart face boards..... 22 00@ 23 00

WHITE PINE.

1st and ad clear, 4-4..... \$48 50@ \$51 50

3d clear, 4-4, 5-4, 6-4 and 8-4..... 48 50@ 51 50

Good edge culls..... 43 00@ 44 00

Good stock..... 17 00@ 17 50

White pine, No. 1, 4-foot headed pickets..... 13 50@ 14 50

4 selected edge..... 39 00@ 43 50

6x8-4 selected edge, box out..... 39 00@ 46 00

CYPRESS.

4-4x6, 16 feet, clear..... \$22 50@ \$23 50

4x6, 16 feet, fencing..... 11 50@ 12 50

4 rough edge..... 9 00@ 9 50

4 edge, Nos. 1 and 2..... 19 00@ 21 00

HARDWOODS.

Oak.

%, Nos. 1 and 2..... \$80 00@ \$100 00

4, Nos. 1 and 2..... 90 00@ 100 00

5-6, 6-4 and 8-4..... 95 00@ 110 00

Nos. 2½, 3 and 4..... 100 00@ 110 00

Newell stuff, clear of heart..... 112 50@ 125 00

Culls..... 30 00@ 35 00

Oak.

Cabinet, white and red, plain sawed

and good 1 and 2, 8 in. and up, 12

to 16 feet long, 4-4..... 225 00@ \$30 00

5-4 to 8-4..... 300 00@ 32 50

Quartered white, 1 and 2 quality, all

figured, 6 in. and up wide, 4-4..... 52 00@ 55 00

Culls..... 10 00@ 13 00

Pine.

Nos. 1 and 2, ¾..... \$21 50@ \$22 50

" 4-4..... 24 00@ 26 00

Nos. 5, 6 and 8-4..... 25 00@ 27 00

In yellow pine cargoes, log run stock..... 13 00@ 16 00

Culls..... 14 00@ 16 00

SHINGLES.

Cypress, No. 1 hearts, sawed, 6x20..... \$7 50@ \$7 75

No. 1 saps, shaved, 6x20..... 5 50@ 6 25

No. 1 hearts, shaved, 6x20..... 6 50@ 7 00

No. 1 saps, shaved, 6x20..... @ 5 00

LATHS.

White pine..... \$2 85@ \$3 00

Spruce..... 2 00@ 2 40

Cypress..... 2 00@ 2 15

Norfolk.

[From our own Correspondent.]

NORFOLK, VA., June 29.

The week under review has presented a considerable volume of business in lumber, and the outlook at this and adjacent milling points is encouraging. There is a very healthy tone in lumber affairs generally, and at all points throughout the saw mill sections of Virginia there is considerable activity. Saw logs are abundant, and mills have no trouble in getting proper timber, while the demand is in most cases urgent. Everywhere there appears to be the same rush in getting out orders for prompt delivery, and shipments for the current month will be very heavy. The demand for Virginia and North Carolina kiln-dried lumber is very active, and on account of the reputation acquired for this wood orders are plentiful, with values for all dimensions very steady. On air-dried lumber the demand is light, and labor troubles at Baltimore still keeps the business depressed, with prices easy and lower. There is a fair business in progress at all planing mills, and dressed flooring is firmer in value

at \$13 00 to \$13 50 for No. 1, \$10 00 to \$10 50 for No. 2 and \$7 00 to \$7 50 for box. Shipments of dressed lumber continue good, and a large increase in the volume of business in this line is looked for during the current year. The domestic inquiry is well maintained, and, while the foreign demand is yet in its infancy, a growing trade is expected with the United Kingdom and continent. Under the present conditions it is safe to say that the port of Norfolk at no time in the history of its lumber trade has been in a better condition to advance the interests of this important industry. The following list represents the prices current to-day:

Kiln-dried North Carolina pine lumber f. o. b. at this port is quoted as follows.

	\$22 50@ —
5x10	16 00@ —
5x12	19 00@ —
5x14	19 50@ —
5x16	15 00@ —
5x18	15 50@ —
5x20	17 00@ —
5x22	13 50@ —
5x24	25 00@ —
5x26	15 00@ —
5x28	18 00@ —
5x30	18 50@ —
5x32	14 00@ —
5x34	15 00@ —
5x36	15 00@ —
5x38	15 00@ —
5x40	15 00@ —
5x42	15 00@ —
5x44	15 00@ —
5x46	15 00@ —
5x48	15 00@ —
5x50	15 00@ —
5x52	15 00@ —
5x54	15 00@ —
5x56	15 00@ —
5x58	15 00@ —
5x60	15 00@ —
5x62	15 00@ —
5x64	15 00@ —
5x66	15 00@ —
5x68	15 00@ —
5x70	15 00@ —
5x72	15 00@ —
5x74	15 00@ —
5x76	15 00@ —
5x78	15 00@ —
5x80	15 00@ —
5x82	15 00@ —
5x84	15 00@ —
5x86	15 00@ —
5x88	15 00@ —
5x90	15 00@ —
5x92	15 00@ —
5x94	15 00@ —
5x96	15 00@ —
5x98	15 00@ —
5x100	15 00@ —
5x102	15 00@ —
5x104	15 00@ —
5x106	15 00@ —
5x108	15 00@ —
5x110	15 00@ —
5x112	15 00@ —
5x114	15 00@ —
5x116	15 00@ —
5x118	15 00@ —
5x120	15 00@ —
5x122	15 00@ —
5x124	15 00@ —
5x126	15 00@ —
5x128	15 00@ —
5x130	15 00@ —
5x132	15 00@ —
5x134	15 00@ —
5x136	15 00@ —
5x138	15 00@ —
5x140	15 00@ —
5x142	15 00@ —
5x144	15 00@ —
5x146	15 00@ —
5x148	15 00@ —
5x150	15 00@ —
5x152	15 00@ —
5x154	15 00@ —
5x156	15 00@ —
5x158	15 00@ —
5x160	15 00@ —
5x162	15 00@ —
5x164	15 00@ —
5x166	15 00@ —
5x168	15 00@ —
5x170	15 00@ —
5x172	15 00@ —
5x174	15 00@ —
5x176	15 00@ —
5x178	15 00@ —
5x180	15 00@ —
5x182	15 00@ —
5x184	15 00@ —
5x186	15 00@ —
5x188	15 00@ —
5x190	15 00@ —
5x192	15 00@ —
5x194	15 00@ —
5x196	15 00@ —
5x198	15 00@ —
5x200	15 00@ —
5x202	15 00@ —
5x204	15 00@ —
5x206	15 00@ —
5x208	15 00@ —
5x210	15 00@ —
5x212	15 00@ —
5x214	15 00@ —
5x216	15 00@ —
5x218	15 00@ —
5x220	15 00@ —
5x222	15 00@ —
5x224	15 00@ —
5x226	15 00@ —
5x228	15 00@ —
5x230	15 00@ —
5x232	15 00@ —
5x234	15 00@ —
5x236	15 00@ —
5x238	15 00@ —
5x240	15 00@ —
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5x244	15 00@ —
5x246	15 00@ —
5x248	15 00@ —
5x250	15 00@ —
5x252	15 00@ —
5x254	15 00@ —
5x256	15 00@ —
5x258	15 00@ —
5x260	15 00@ —
5x262	

tions to-day are 12 cents for a good average quality.

Memphis.

[From our own Correspondent.]

MEMPHIS, TENN., June 28.

There is a decided improvement in the tone and condition of the market and of the prospects since my letter of last week. Not that there is so much more business, but a better feeling prevails. The political conventions are over and that much is off the minds of the people. The outlook for crops in the valley is improved and roads are better, so mills can get logs and transport their output to the railroads easier and with more certainty.

There is not much if any change in the relative proportions of supply and demand. Rough lumber is still down in price below a living profit. All the hardwoods are in active demand and the prices firm and well maintained.

There is but little doing in the exchange now; it is even quieter than last summer, but as the season advances there will be need of its restraining influences on freight rates, weights and little "discriminations."

Prices are firm and well maintained, but there is no quotable change.

The following are the current wholesale quotations:

BLACK WALNUT.	
1st and 2d, 1, 1½ and 2 inch.....	\$65 00@ 70 00
Common.....	35 50@ 40 00
Counter tops.....	90 00@ 110 00
ASH.	
1st and 2d clear, 1 to 4-inch.....	26 00@ 32 00
Common.....	12 00@ 14 00
CYPRESS.	
1-inch, 1st and ad clear.....	22 00@ 24 00
1½, 1¾ and 2 inch.....	24 00@ 26 00
Fencing 1x6, 16 feet.....	15 00@ 16 00
POPLAR.	
1-inch, 1st and ad clear.....	24 00@ 25 00
½ and 2-inch, 1st and ad clear.....	26 00@ 28 00
Common boards.....	14 00@ 16 00
Dressed, 1, 1½ & 2-in., 1st and ad clear.....	28 00@ 30 00
Common dressed, 1-inch.....	16 00@ 17 50
Squares.....	22 50@ 25 00
COTTONWOOD.	
1 to 3-inch mill run, culms out.....	9 00@ 12 00
Squares.....	12 50@ 16 00
RED GUM.	
1st and 2d.....	16 00@ 20 00
Common and culms.....	8 00@ 10 00
OAK.	
1 to 4-inch, 1st and ad.....	24 00@ 26 00
Common, 1 and 2 inch.....	13 00@ 15 00
Quarter oak, 1 inch, 1st and ad.....	30 00@ 32 00
Quarter oak, 1½-inch and up.....	34 00@ 36 00
White #1 higher.	
YELLOW PINE.	
1st and 2d, 1½ and 2-inch.....	18 00@ 20 00
Dressed.....	25 00@ 30 00
Flooring, 5 and 6 d and m.....	17 50@ 20 00
Flooring, 3 and 4 d and m.....	17 50@ 20 00
2d flooring.....	18 00@ 17 50
Heat step lumber.....	27 50@ 30 00
Ceiling, 1st and 2d, ½, ¾ and ½.....	17 5 @ 20 00
Ceiling, 1st and 2d, ½, ¾ and ½.....	16 00@ 18 00
Common f. o. b. Memphis.....	
Car lots.....	12 50@ —
TIMBER (LOGS).	
Poplar.....	6 00@ 10 00
Cypress.....	6 00@ 9 00
Cottonwood.....	3 00@ 4 00
Gum.....	3 00@ 4 50
Oak.....	6 00@ 12 00
Ash.....	8 00@ 13 00
Black walnut.....	15 00@ 50 00
SHINGLES.	
No. 1 heart cypress, 16 inch.....	3 0@ —
No. 1 sap, 16 inch.....	2 25@ —
LATH.	
Poplar.....	2 00@ 2 75
Cypress.....	2 00@ 2 50
Pine.....	2 00@ 2 00

Chattanooga.

[From our own Correspondent.]

CHATTANOOGA, TENN., June 25.

There has been an increasing demand for lumber during the past week, and mills are generally full of orders. The volume of business is good and the outlook most hopeful. We quote as follows:

Yellow pine framing up to 26 ft. long, \$—@ \$10 00
Flooring, standard..... \$—@ 15 00
Ceiling, standard..... \$—@ 13 50
White oak, log run..... \$—@ 13 00
Poplar, 1st and 2d..... \$—@ 21 00
All f. o. b. cars at Chattanooga sixty days acceptance, or a per cent. off for cash.

Beaumont, Texas.

BEAUMONT, TEXAS, June 28.

The southeastern lumber section of this State is at present passing through a most pronounced season of activity, and the predictions several months ago of a period of dullness is a most agreeable disappointment to many engaged in this industry. At this and adjacent points there is an active demand from State sections and various points in the Northwest, and, with the present influx of orders, the mills are all pressed to fill orders, and for several months to come will be working up to

their full capacity. The Beaumont *Journal*, which is the official organ of the Texas Lumber Association, in its review of the market says: "Orders for dealers' stock from without the State continue to come in with encouraging regularity and as a general thing at list prices. Stocks are not large, and the mills now running are cutting no more than is required to supply the present demand; hence there is no desire to make sales at figures below those named in the list." Values throughout the list are remarkably steady. The demand, however, is not so much for the best grades, thus leaving a larger stock of this class of lumber to accumulate and to be carried over by manufacturers. The inquiry for railroad ties and timber is better, and mills have all they can do to promptly meet their increasing orders. In the shingle market the conditions are similar to those of other branches, and the tone is decidedly healthy, the cutting capacity not being equal to the pressing demand from State and outlying points. Prices, however, continue easy and unchanged at \$3.00 per M for dimension hearts, \$2.70 for five and six dimension mixed and \$2.35 for dimension mixed four-inch pine. In the district of Westlake, Orange and Sabine Pass there is the same sharp snap and vigor in the lumber trade, and the outlook is equally encouraging.

At Village Mills, on the Sabine & East Texas Railway, a large saw mill which has been closed down for some time is now running full time, supplied with labor from Beaumont, as mentioned in a previous letter. This plant and the Eagle Mills, at Beaumont, are owned by the Texas Tram & Lumber Co., whose headquarters are at the latter point. This company has a capital of \$1,000,000, with the capacity of the two mills 175,000 feet, and that of the planers 125,000 feet per day. A notable fact throughout this section is the spirit of enterprise everywhere present in lumber circles. Every new appliance of a valuable character is promptly adopted, and money for betterments is freely invested, which usually brings the profitable return. The mills of Olive, Sternberg & Co. at Ohio have been shut down for repairs, and additions have been made to the power and the cutting capacity increased. There is at present some prospect of capitalists entering into the hardwood industry which has not yet been developed, the State at present being without one hardwood saw mill, while the immense forests of oak, ash, elm and other woods of Texas remain in their virgin state.

British Timber Trade.

The London *Timber Trades Journal* of the 18th inst., in its statement of the landings, deliveries and stocks of woods, gives American walnut as follows: Landed for the week 1,049 planks, delivered 137 and stocks on hand, 11,623. Of Florida cedar fifty logs were delivered, and stocks remaining on hand 4,612 logs. The same journal, in its review of sales for the week, states that a cargo of pitch pine timber and planks ex Rialto from Mobile sold in Liverpool for account of W. H. H. Greenwood realized satisfactory prices. The timber averaged 32½ feet per log and sold at 13½ d. per foot.

COTTON MARKET.

[Special report by Atwood Violett & Co.]

NEW ORLEANS, LA., June 25.

The condition of affairs existing when our last weekly letter was written still continues. While the outlook seems more hopeful, still there is no certainty of the course the Senate may take in connection with the "Hatch" bill, and as a result business is paralyzed and prices are lower. New Orleans sales of spot cotton during this week are only 2,850 bales, and prices are officially quoted at a decline of one-

quarter cent, but it is difficult for factors to obtain these quotations, and to sell a large lot they would unquestionably be obliged to offer concessions. The excellent crop accounts which have been received from every quarter of the belt have not tended to urge buyers into the market, which was already weak enough by reason of the legislation before Congress. Foreign spinners are not blind to their own interests, and are not affording us any aid in lifting us out of the mire into which we have apparently, of our own free will, thrown ourselves. Liverpool has seen a dull and dragging market, with insignificant sales and easier prices, and the situation on the whole is far from encouraging to the planter or to the merchant who has for sale the planter's cotton, and from the proceeds of which he must reimburse himself for the advances made to raise the crop, of which there is, unfortunately, still a very large proportion to be sold. Our foreign advices are to the effect that Havre and Liverpool expect great advantages to accrue to them from the passage of the "Hatch" bill, which would force all those who either wish to hedge their legitimate transactions or care to speculate to place their orders in those markets. A prominent authority in Havre, in his periodical circular on the cotton situation, takes pleasure in calling particular attention to this fact, and makes the significant statement that, as under the provisions of the bill the firm offer business will be abolished in America, spinners will no longer be able to report direct, and will, therefore, be reduced to going back to the conditions existing a score of years ago, when they were obliged to look to the importing merchants for their supplies, and were comparatively at the mercy of the houses of large capital. In other words, the work of twenty years in steadily doing away with the middleman and the heavy tax he levied on consumers is to be destroyed by a single enactment of Congress, and the planter is to be loaded again with the charges which it has taken so many years to lift from his back. The fact is indisputable that all charges which an agricultural product suffers must come out of the pocket of either the producer or consumer. In this case the cotton producer is also a consumer in the clothes worn by himself and family, and he is forced to bear the burden doubly. The Havre authority whom we quote concludes his remarks on the "Hatch" bill with the following very significant sentence: "Truly the Americans owe us this little compensation in the 'Hatch' bill after the damage done to our industries by the McKinley bill."

CLOSING PRICES OF FUTURES JUNE 29.

Months.	New Orleans.	New York.	Liverpool.
June.....	6 92	—	3 58-64@3 59 64
July.....	6 93	—	3 58-64@3 59-64
August.....	6 95	—	3 58-64@3 61-64@3 62 64
September.....	7 03	—	buyers
October.....	7 10	—	4 70-4 74@4 75-64
November.....	7 17	—	4 70-4 74@4 75-64
December.....	7 25	—	4 70-4 74@4 75-64
January.....	7 32	—	4 70-4 74@4 75-64
February.....	7 41	—	4 70-4 74@4 75-64
March.....	7 49	—	4 70-4 74@4 75-64
April.....	—	—	4 70-4 74@4 75-64
May.....	—	—	4 70-4 74@4 75-64
Tone of the market.....	Quiet.	Quiet.	Firm.

CLOSING PRICES OF SPOT COTTON JUNE 29.

Grade.	New Orleans.	New York.	Liverpool.
Middling.....	7 1/2	7 1/2	4
Low middling.....	6 11-16	6 15-16	3 13 16
Good ordinary.....	6 3-16	6 1/2	3 1/2

Tone of market... Quiet. Quiet. Dull.

TRADE NOTES.

THE Midvale Steel Co., of Nicetown, Philadelphia, is adding to its plant a three-story brick and granite machine shop 198x112 feet.

THE Campbell & Zell Co., of Baltimore, Md., has taken the contract for a 250 horse-power Zell

water-tube boiler for the Fort Wayne Electric Co. of this city.

To the capitalist desirous of engaging in profitable foundry and machine business in the South, L. H. Spilman, McCullum building, Knoxville, Tenn., receiver for a plant completely furnished with machinery, tools and patterns for such work, presents an opportunity worthy of investigation.

THE Waterbury Brass Co., of Waterbury, Conn., is putting up a new wire mill which will be of iron, designed and furnished by the Berlin Iron Bridge Co., of East Berlin, Conn. The rolling mill will be 100 feet wide by 160 feet long, with a wing to be used for drawing wire 40 feet wide by 230 feet long.

MESSES. SHEA & STRAHLE, of Chattanooga, Tenn., proprietors of the Novelty Boiler Works, are crowded with orders and contemplate seeking a new location in order to enlarge. They are now building six boilers to be shipped to New Orleans, two for Birmingham, and the iron work for a large oil refinery in Texas.

THE Graves Elevator Co., of Rochester, N. Y., have secured contracts for furnishing elevators to the following buildings in Atlanta, Ga.: Grant building, Inman building, Southern Medical College, fire department headquarters and De Give building, and also one to Myers & Co., Athens, Ga. The works are very busy in all departments, having other large orders through the Northern States.

JAS. F. LARKINS, formerly of the A. French Spring Co., has become superintendent of the works of the American Spiral Spring Co., of Pittsburg, Pa. Mr. Larkins has been with the A. French Spring Co. for the past fifteen years, and is, therefore, fully acquainted with the business. The American Spiral Spring Co. announces that it is now in a position to make any kind of spiral spring that is needed and in the shortest time.

THE Niles Tool Works, of Hamilton, Ohio, has been reorganized and capitalized at \$2,000,000, of which \$1,000,000 is preferred stock and \$1,000,000 common. The officers are: Alexander Gordon, president; Thomas T. Gaff, vice president; R. S. McKinney, secretary and treasurer. The directors, in addition to these gentlemen, are Matthew Addy, W. P. Anderson, Frank J. Jones, Henry Lewis, James G. Parker and George T. Reiss.

MESSRS. WALDRON & SPROUT, of Muncy, Pa., the well-known manufacturers of French burr mills, announce to the trade that they have been succeeded by the firm of Sprout, Waldron & Co., Mr. Lewis B. Sprout taking an interest in the concern.

The advent of Mr. Sprout, who was the original owner of the business, will largely increase the firm's capital, thus enabling them to provide greater facilities for handling their increasing trade. A continuance of patronage is solicited.

JUST seven days after the disastrous fire which practically destroyed the works of C. W. Raymond & Co. at Dayton, Ohio, they had cleared away the debris, erected new framework to their buildings, put in new machinery, and, by the assistance of two portable engines, resumed operations. At this writing they are in as good working shape as before the fire, and but few days will elapse before they will be running a greatly increased force to compensate for lost time. This is a stroke of energy scarcely equalled, but was necessary owing to the accumulation of orders on hand at the time of the fire.

THE city of Atlanta, in Cass county, Texas, is situated in a section abounding in many varieties of timber especially suited for the manufacture of furniture and handles. The hardwoods, including oak, ash, gum, hickory, cypress, walnut and elm, are still in virgin forests, the saw mills of the town dealing exclusively in pine lumber. The timber is accessible by several narrow-gauge roads and a number of streams. The citizens, appreciative of the peculiar advantages they possess for an extensive lumber industry, are anxious to secure the establishment of a furniture factory of respectable proportions, and offer through the mayor, R. R. Lockett, some liberal inducements towards that end.

THE firm of Hauck & Comstock, Mechanicsburg, Pa., was dissolved early in the year by the retirement of Mr. Hauck on account of ill health. Mr. George S. Comstock succeeds, and the business is going along as usual. Mr. Comstock reports a very considerable amount of work for Southern coal and iron companies, among other contracts at present in his shop, being an extensive washing plant, with special crushers, etc., for the Standard Coal Co., Brookwood, Ala. The ore washers manufactured by this house continue to hold a strong place in the estimation of those using them, and orders are being booked right along. With the revival of business in the iron industry through the South these works will probably be crowded to their fullest capacity.

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

* Means machinery is wanted, particulars of which will be found in "Machinery Wanted" columns.

In correspondence relating to matters reported in this paper, it will be a favor if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ARKANSAS.

Harrisburg—Canning Factory.—The Harrisburg Canning Co., recently reported as organized to start a canning factory, has been incorporated; capital stock \$10,000.

FLORIDA.

Anthony—Phosphate Plant.—The Phosphate Co. of France has let contract for a 100 horse-power automatic engine, two sixty horse power boilers and two double log washers for its plant near Anthony.

Braintree—Artesian Well Company.—The Terra Ceia Artesian Well Co. has been organized with J. H. Kennedy, president; Charles Howard, secretary and treasurer, and J. T. Houston, general manager, to sink artesian wells.

Braintree—Stone Quarry.—Theodore De Farr will open a stone quarry.

Orlando—Fertilizer Company.—H. S. Brooker, Matthew Banyard, C. J. Hicks, C. G. Butt and A. H. Carey have incorporated the Southern Fertilizer Co. with a capital stock of \$35,000.

Ocala—Phosphate Mines.—The Chicago Florida Phosphate Co. has purchased and will develop 5,000 acres of phosphate lands in Marion county.*

Port Tampa—Soda Water Factory.—F. Lane will start a seltzer water, ginger ale, sarsaparilla, etc., factory.

GEORGIA.

Atlanta—Canning Factory.—The Horticultural Society is considering the erection of a canning factory on the co-operative plan.

Bainbridge—Ice Factory.—A \$6,000 ice factory is being built in Bainbridge.

Cochran—Handle, etc., Factory.—W. W. Pool has put in machinery and started the manufacture of handles, singletrees, baseball bats, etc.

Gainesville—Cotton Mill.—The Georgia Manufacturing Co. will add machinery.

Sparta—Cotton Mill.—The cotton mill company reported last week as organized will be known as the Sparta Manufacturing Co.*

KENTUCKY.

Gracey—Flour Mill.—It is reported that endeavors are being made to organize a company to build a \$10,000 flour mill, but no names are mentioned in connection with the report.

Irvington—Creamery.—A stock company is being organized to erect a \$5,000 creamery. Walter Pittigott, John Lydan and others are interested.

Louisville.—The Bourbon Stockyard Co. has amended its charter and authorized its directors to issue \$300,000 of additional stock.

Louisville—Grain Elevator.—The Kentucky Malting Co. will at once rebuild its grain elevator reported in this issue as burned.

Louisville—Electrical Works.—Henry F. Donigan, J. W. Dawson, Joseph Myrick, Jr., and others have incorporated the New Gaynor Electric Co. to manufacture and sell electrical appliances, etc. The capital stock is \$100,000.

Maysville—Stove Foundry.—Parties have made the citizens a proposition for the establishment of a \$180,000 stove foundry.

Paducah—Machine Shops.—The Paducah, Tennessee & Alabama Railway Co. will erect machine shops in Paducah.

Pittsburg—Supply Company.—The Caskey Boat Store Supply Co. has been chartered.

LOUISIANA.

New Iberia—Sugar Refinery.—It is said that Messrs. Taylor Bros., of New Orleans, will pur-

chase the Morbihan plantation near New Iberia and erect on it a central sugar refinery of 500 to 600 canes grinding capacity per day.

New Orleans—Machine Company.—The Louisiana Automatic Fountain Co., Limited, has been chartered to sell fountain or automatic liquid vending machines. Jules O. Koenig is president; Wm. G. Turner, vice-president, and John H. Bruns, secretary; capital stock \$10,000.

New Orleans—Knitting Mill.—The Crescent City Yarn & Knitting Mills have put in additional machinery.

New Orleans—Rice Mills.—The National Rice Milling Co., C. R. Higgins, vice-president, will equip the Reuss & New Orleans Rice Mills with the most improved machinery and appliances, and next year will erect a new mill.

Westlake—Rice Mill.—C. B. Lake & Co. will erect a 100 barrel rice mill.

New Orleans—Mercantile Company.—The Richardson Williams Co., Limited, has been chartered with a capital stock of \$300,000.

MARYLAND.

Baltimore—Soap Company.—N. R. E. Mayer, John K. Hogg, Edw. C. Eichberger, Samuel R. Hogg and I. S. Field have incorporated the Mayer Magic Soap Co. with a capital stock of \$10,000.

Baltimore—Tinplate Mill.—Messrs. Coates & Co. will rebuild their tinplate mill at Locust Point, reported in this issue as burned.

Baltimore.—Wm. H. Stellman, Geo. R. Gaither, Jr., Henry W. Rogers and others have incorporated the Baltimore Shipping Co. to manufacture, trade, pack fruit, etc. The capital stock is \$25,000.

Elkton—Electric-light Plant.—The Elkton Electric Light Co., mentioned last week, has organized with Wm. T. Warburton, president; Charles R. Maxwell, secretary, and Robert C. Lewis, treasurer.

MISSISSIPPI.

Batesville—Canning Factory.—A stock company has been organized to establish a canning factory. J. S. Goff & Co. can give information.*

Durant.—The Farmers' Mercantile Co. has been chartered with a capital stock of \$20,000.

NORTH CAROLINA.

Kinston—Knitting Mill.—The Orion Knitting Mill intends to double its capital stock of \$12,000 and put in more machinery.

Salisbury—Flour Mill.—J. S. McCubbins, Sr., R. J. Holmes, D. R. Julian and several others will organize a stock company to erect a roller flour mill.

Winston—Wagon Works.—The South Side Land Co. has contracted with J. C. & Samuel Spaugh, of Waughtown, for the removal of their wagon works to Winston.

SOUTH CAROLINA.

Columbia—Electric light Plant.—The city may erect an electric-light plant. W. B. Lowrance is chairman of the committee having the matter in charge, and should be addressed for information.

Florence—Laundry and Mattress Factory, etc.—Messrs. Kennedy & Praley have purchased and will operate the Dixie Steam Laundry and the Florence Mattress Factory.

TENNESSEE.

Chattanooga—Medicine Factory.—The Spencer Medicine Co., of Greenville, will remove its plant to Chattanooga, and as soon as installed obtain a new charter and increase its capital stock to \$50,000 paid up.

Chattanooga—Publishing.—The Eclectic Publishing Co. has been organized with W. W. Hooper, president; N. C. Steele, vice-president, and T. P. Jarnagin, secretary and treasurer.

Erwin—Mineral Development Company.—The Metropolitan Local Mining & Development Co. has been chartered by Connecticut and Virginia capitalists to lease, buy and develop mineral lands. Colonel Emmert, of Erwin, is president of the company; capital stock \$50,000.

Fayetteville—Water Works.—J. A. Thompson, of Murfreesboro, is mentioned in connection with a plan for the formation of a \$50,000 stock company to build water works in Fayetteville.

Greeneville—Water Works.—A system of water works will be built. Address John Landstreet, Jr., for information.*

Knoxville—Engine Works.—The National Manufacturing Co. has been chartered to manufacture an engine patented by a Mr. Tubbs, of Front Royal, Va.

Memphis—Box Factory.—J. S. McFerren & Co. are erecting a box factory; machinery has been purchased.

Nashville—Iron Manufacturing & Refining Company.—Robert Ewing, Percy Warner, Edw. n

Warner, N. Whitney and J. A. Cooper have incorporated the Metal Refining Co. to manufacture and refine iron and other metals.

Pleasantville—Saw Mill.—C. L. Storrs has recently erected a band saw mill.

TEXAS.

Belton—Printing Works, etc.—J. L. Greathouse and others have incorporated the Peerless Printing Co. of Belton and Temple to do a general printing and publishing business. The capital stock is \$10,000.

Dallas—Furniture Company.—A charter has been granted the Showers-Howing Furniture Co. for the purpose of buying and selling furniture, etc. The incorporators are W. H. Showers, Anton Howing and others; capital stock \$10,000.

Houston—Water Works.—The Houston Water Works Co. will put in an engine and pumping machinery capable of supplying 10,000,000 gallons of water daily.

Houston—Brick and Tile Works.—A. F. Maury, of Winfield, Kans., is removing his vitrified brick and tile works to Houston.

Hyatt—Lumber Mill.—J. S. & Wm. Rice are rebuilding their lumber mill which was recently destroyed by fire.

Ladonia—Cottonseed oil Mill.—The Ladonia Cotton Oil Co., reported last week as chartered, has let contract for the erection of a cottonseed-oil mill.

Llano—Graphite Mines.—W. P. Poland will develop graphite beds.*

Marlin—Cottonseed-oil Mill.—The company lately reported as organized to erect a cottonseed-oil mill has obtained charter as the Marlin Oil Co. The incorporators are M. L. Levy, J. A. Martin, John W. Robinson and T. E. Battle; capital stock \$100,000.

Schulenburg—Broom and Mattress Factory.—The Schulenburg Broom & Mattress Co. has been chartered by G. Krausse, E. B. Kessler, August Richter, A. Fonda and Frederick Carstens. The capital stock is \$10,000.

VIRGINIA.

Berkley—Barrel Factory.—A \$50,000 stock company will be organized to erect a factory for the manufacture of the East patent barrel. Justice East, of Norfolk, is interested.

Buena Vista—Crate Factories.—The Marr Egg Crate Co. intends to establish several branch factories throughout the country. C. W. Smith will make a tour and locate the plants.

Capron—Lumber Mills.—G. W. Truitt & Co. are building dry kilns and putting in additional boilers and machinery.

Manchester—Shuck Factory.—George P. Stacy's Sons will rebuild their shuck factory reported in this issue as burned.

Norfolk—Cable and Telegraph Company.—The Virginia Telegraph & Cable Co. has been chartered to lay and maintain telegraph and submarine cables from points on the coast of Virginia or South Carolina to New York city and to San Domingo or Cuba, etc. W. H. Phelps is president; Augustus A. Ireland, secretary, and E. G. Kremer, treasurer, all of New York city. The capital stock is \$5,000.

Norfolk—Saw and Planing Mill.—J. E. Ettridge will erect a saw and planing mill.

Portsmouth—Ice Factory.—O. B. Baker will erect an ice factory of twenty tons daily; contract for outfit of machinery has been let. The plant will be built at once, and be ready for operation by July 15.

Richmond—Mercantile Company.—The E. B. Taylor Co. has been incorporated to wholesale and retail china and glassware. E. B. Taylor is president; G. Scott McRae, vice-president, and A. J. Parrish, secretary and treasurer; capital stock \$70,000.

Roanoke—Cigar and Cigarette Factory.—Samuel P. Greenstone, formerly of Lynchburg, has started a cigar and cigarette factory in Roanoke.

Suffolk—Ship-yards.—The Suffolk Shipbuilding Co., reported last week as chartered, already has yards in operation and its first vessel is nearly completed. The officers of the company are: L. P. Harper, president, and W. W. Cockey, secretary and treasurer.

Winchester—Fertilizer Works.—Grim & Haymaker have started a mill for the manufacture of phosphate from bone for fertilizing purposes.

WEST VIRGINIA.

Central City—Brewery.—The Hunting on Brewing Co. has been chartered by Leo Ebert, D. Logg, E. Furlong, Chas. Shinkle and M. Hallow, all of Ironton, Ohio, with a capital stock of \$200,000. This company will operate the brewery previously reported as being erected by Chas. Shinkle & Co.

Charleston—Vehicle Works.—The Buckeye

Cart Co. will probably rebuild its factory recently burned.

Charlestown—Brass Works.—Victor Harder, of New York, has purchased the Shenandoah Brass Works and will operate same.

Charlestown—Fertilizer Works.—W. F. & T. P. Lippitt will erect an addition to their fertilizer works.

Charlestown—Grain Elevator.—Reed, Long & Manning, of Rippon, are erecting a grain elevator at Charlestown.*

Hendricks.—Jacob E. Halling, Jno. A. McNeely, I. W. Ryan and others have incorporated the Hendricks Co. The capital stock is \$150,000, with privilege of increasing to \$500,000.

Huntington—Foundry.—M. DeBord and J. Habrlate are erecting a foundry.

Kearneysville—Grain Elevator.—G. T. Hodges is erecting a grain elevator.

Keyser—Flour Mill.—The L. A. Rizer Milling Co., reported last week as chartered, will operate L. A. Rizer's flour mill and deal in grain; capital stock \$15,000.

Philippi—Coal and Iron Company.—J. H. Felton, Columbus Kelly, G. B. Harvey, George W. Gall, Jr., J. N. B. Crim and A. G. Dayton have obtained charter for the Philippi Coal & Iron Co. The capital stock authorized is \$600,000.

Wheeling—Publishing Company.—John N. Leisure, L. P. Sisson, W. S. Wills, T. L. Harvey and T. J. Hugo have incorporated the Ohio Valley Publishing Co. to publish the *Ohio Valley Farmer*. The capital stock is \$40,000.

BURNED.

Baltimore, Md.—Messrs. Coates & Co.'s tin-plated mill at Locust Point.

Lawrenceburg, Ky.—The main building of Bond & Lillard's distillery.

Louisville, Ky.—The Kentucky Malting Co.'s grain elevator; loss about \$130,000.

Manchester, Va.—Geo. P. Stacy's shuck factory; loss \$5,000.

Woodville, Miss.—R. M. McGehee's saw mill in Wilkinson county.

BUILDING NOTES.

Alemburke, N. C.—Courthouse.—Plans have been completed for the new Stanly county courthouse, and bids are invited. The estimated cost is \$10,000. The county clerk can be addressed.

Alexandria, La.—Hotel.—A \$50,000 stock company has been formed to build a hotel.

Augusta, Ga.—Church.—A. W. Todd has completed plans for a \$30,000 brick and stone edifice for the Springfield Baptist Church.

Baltimore, Md.—Church.—J. M. Watts has contracted for the stone edifice, 61x70 feet, for the North Baltimore United Brethren Church, noted in last issue. J. C. Gott is the architect, and the cost will be \$12,000.

Bartow, Fla.—Hotel.—A \$200,000 stock company will, it is stated, be organized to build a hotel.

Belleview (P. O. Newport), Ky.—Church.—The Catholics intend building an edifice. George M. Geiger can give particulars.

Bessemer, Ala.—School Building.—Contract for the school building lately noted has been awarded to Fred Jay. Hilliken & McClain prepared the plans, and the cost will be \$10,000.

Bridgeport, Ala.—The South Side Home Co., organized with a capital stock of \$50,000, will build a large number of dwellings.

Bristol, Tenn.—School Building.—Smith & Wilson have received contract for the \$13,000 school building. C. L. Mould prepared the plans.

Camden, S. C.—Bank Building.—The Farmers and Merchants' Bank is having plans prepared for a bank building.

Charleston, W. Va.—Scott Bros. will erect a four-story brick business house to cost about \$15,000.

Charleston, S. C.—Church, etc.—D. G. Zeigler is preparing plans for a \$60,000 church for the Baptists, an \$8,000 residence for B. W. Wohiler and a \$10,000 residence for J. L. Shepard, to have steam heat, etc. He solicits catalogues from manufacturers of equipments for such structures.

Charlottesville, Va.—School Building.—The erection of a \$25,000 school building is proposed. The mayor can give information.

Danville, Va.—Warehouse.—The Danville Storage Warehouse Co. will build a three-story addition 80x112 feet to its warehouse.

Denton, Texas—Church.—The Catholics will build an edifice.

Ebens, W. Va.—School Building.—J. C. Irons

will receive proposals until July 5 for erecting the two story brick school building 26x50 feet mentioned in last issue.

Fort Worth, Texas—Public Building.—W. J. Edbrooke, supervising architect, Treasury Department, Washington, D. C., will receive proposals until July 12 for all the labor and materials required for the trench excavation, foundations, cut stone work and brick work of the basement and area walls, basement columns, first floor beams, etc., for the postoffice building at Fort Worth.

Galveston, Texas—Church, Hotel, etc.—The North Galveston Association reports that contracts have been awarded for a three-story hotel, two stores, bank building, church and school, depot and fourteen residences at North Galveston.

Greensboro, N. C.—Church.—Samuel Brown will build a church for the Society of Friends.

Hawkinsville, Ga.—School Building.—A public school building will be erected. The mayor can give particulars.

Henrietta, Texas—Hotel, etc.—The Commercial Building Club will erect a \$12,000 building—Sanguinet & Messer, of Fort Worth, prepared the plans; W. A. Squires will build a \$7,000 business house; Stine, Logan & Patton a \$7,000 building, and N. Sneathy is erecting a \$16,000 brick hotel.

Huntsville, Ala.—The Huntsville Land Co. will build fifty cottages.

Huntington, W. Va.—Church.—Saint & Co., of Dayton, Ohio, have been awarded contract for erecting the edifice for the Johnson Memorial Church.

Huntington, W. Va.—Church.—Stewart & Walker have completed drawings for a \$15,000 stone edifice for the colored Baptists.

Jacksonville, Fla.—Hall.—The Board of Trade, Elk and Library associations jointly contemplate the erection of a \$30,000 hall building.

Lake Charles, La.—Bank Building—Contract has been awarded for the three-story 60x10 foot bank building of the Calcasieu Bank, lately noted. The probable cost is \$25,000. Alfred Muller, of Galveston, Texas, prepared the plans.

Martinsburg, W. Va.—Public Building.—Proposals will be received until July 6 by W. J. Edbrooke, supervising architect, Treasury Department, Washington, D. C., for all the labor and materials required for the additional excavation and to build complete the exterior basement walls up to first floor line and the area and step foundations, drain-pipes, etc., for the postoffice, etc., building at Martinsburg.

Maryville, Tenn.—College.—The Presbyterians will build a college at Maryville.

Ocala, Fla.—Club Building.—The members of the Ocala Rifles contemplate the erection of a \$10,000 club building.

Orangeburg, S. C.—Church.—The members of St. Paul's Methodist Episcopal Church South intend building a church. A. C. Dibble can give information.

Richmond, Va.—The building for the Chamber of Commerce, lately noted, will be six stories, with a tower, in front and seven stories in rear, 95x100 feet. W. O. Burton has contract at \$112,706, and M. J. Dimmock is the architect.

Tallahassee, Fla.—Public Building.—W. J. Edbrooke, supervising architect, Treasury Department, Washington, D. C., will receive proposals until July 21 for all the labor and materials required for the trench excavation, foundations, cut stone and brick work of the basement and area walls, basement columns, first floor beams, girders and wood joists for the United States courthouse and postoffice building at Tallahassee.

Washington, D. C.—Church.—Joseph C. Johnson will prepare plans for a brick and stone church 65x85 feet for the Douglas Memorial Church. Steam heat, cathedral glass windows, etc., will be used. The estimated cost is \$20,000.

Washington, D. C.—Hospital.—Leon Dessez has prepared plans for the erection of several buildings at the Garfield Hospital, including a three-story brick and stone structure 78x76 feet, to have iron stairways and an elevator, and be plastered with adament laid on iron lath. A hot-water heating plant, electric bells, etc., will be put in, and the building will cost about \$40,000. A one-story boiler-house 35x60 feet will also be erected.

Washington, D. C.—Public Building.—W. J. Edbrooke, supervising architect, Treasury Department, Washington, D. C., will receive proposals until July 19 for all the labor and materials required for concrete and stone footings, etc., for the postoffice building at Washington.

Washington, D. C.—The Post will, it is understood, erect a large business building. Joseph C. Johnson has prepared plans for a three-story brick business building 45x106 feet for G. F. Harbin and E. F. Arnold, trustees of the Bayne estate; electric lights, plate glass windows, etc., will be put in, and the probable cost is \$16,000. George S. Cooper has prepared plans for a six-story store and apartment house for John E. Davidson; it will have a combination steam and hot water plant, electric elevator, mail chute, etc.

RAILROAD CONSTRUCTION.

Altamont, Ky.—Railroad.—Work on the Altamont & Manchester Railroad, which commenced March 30 and interrupted May 14 by a strike of coal miners, has been resumed and is now progressing. C. Crooke is president, and can give particulars.

Bryan, Texas—Railroad.—It is understood that a proposition, including a cash bonus, will be submitted to the stockholders of the Houston & Texas Central Railroad Co. (office, Houston) at a meeting soon to be held to extend their road from Bryan to the southwest through the Brazos valley.

Cherry Run, W. Va.—Railroad.—It is stated that survey will soon commence on the Cherry Run & Potomac Valley Railroad, lately mentioned. Thomas M. King, of Baltimore, can give particulars.

Clarkesville, Texas—Railroad.—The proposed route of the Kansas City & New Orleans Railway, lately noted, is from Clarkesville to Dalby Springs, thirty-six miles; thence south to the St. Louis & Southwestern Railroad at a point to be known as Desboro; thence southeast to Atlanta, Cass county, some forty miles, and from there to Collins Bluff, Ark., on Red river. A line is also to extend from Texarkana to Sulphur river. An Ohio firm is now figuring on the grading and bridging. W. A. Dusborough is president of the company, and Hugh Stewart, chief engineer. Its office is at Dalby Springs, Texas.

Copeland, Texas—Railroad.—The Missouri, Kansas & Texas Railroad Co. (office, Denison) is running a preliminary survey for its 26-mile extension from Copeland to Austin.

Cuthbert, Ga.—Railroad.—The building of a railroad from Cuthbert to Richland is proposed. The route has been surveyed, and the distance is about twenty-three miles, with easy grades.

Fordville, Ky.—Railroad.—The locating of the extension of the Owensboro, Falls of Rough & Green River Railroad (office, Owensboro) to Horse Branch, connecting with the Newport News & Mississippi Valley, has been completed, and it is likely that contracts will soon be awarded. It is expected to be in operation by January 1.

Frankfort, Ky.—Railroad.—A survey has been made for a railroad from Frankfort to Waddy, on the Louisville Southern. The distance is eighteen miles, and the road, if built, will no doubt be in the interest of the Louisville Southern.

Galveston, Texas—Railroad.—The North Galveston, Houston & Kansas City Railway Co. has been chartered by M. C. McLemore, Walter Gresham, A. R. Campbell and others to construct a railroad from the Edwards league, in Galveston, to Virginia Point, a distance of sixteen miles. The capital stock is \$160,000.

Greenville, Texas—Railroad.—The Southwestern Improvement & Construction Co. has work in progress on widening the gauge of the East Line & Red River Railroad, previously reported.

Hollow Rock, Tenn.—Railroad.—The construction of the extension of the Paducah, Tennessee & Alabama Railroad from Hollow Rock to Lexington, thirty miles, noted in last issue, will be pushed from both points. A force under Contractor Johnson, of Memphis, is at work at Hollow Rock.

Houston, Texas—Railroad.—An agreement has been reached between the citizens and the Missouri, Kansas & Texas Railroad Co. (office, Denison) for the building of the proposed extension of the latter's road to Houston from Boggy Tank, a distance of eighty miles. It is understood that the donation of right of way and a bonus of \$25,000 are the inducements granted. The company will, it is stated, have a surveying corps in the field July 1 and complete the extension by January 1.

Knoxville, Tenn.—Railroad Bridge.—The Knoxville, Cumberland Gap & Louisville Railroad Co. will build an iron bridge across a ravine in Lonesome valley to replace a wooden trestle lately wrecked.

Louisville, Ky.—Belt Railroad.—The project of building a belt railroad encircling Louisville has been revived, with a good promise of realization. A syndicate, including George L. Danforth, T. C. H. Vance, J. C. Fawcett and others is said to be interested in the scheme, with abundant financial backing.

Macon, Ga.—Electrical Railroad.—The Macon Consolidated Street Railroad Co. has applied for authority to convert its present mule lines into electrical roads. The Thomson-Houston system will be used.

Malden, W. Va.—Railroad.—Shump & Glenn have received contract for grading ten miles of the Gauley river extension of the Kanawha & Michigan Railway.

Montgomery, Ala.—Railroad.—H. G. McCall, president of the Alabama Great Trunk Railway, reports that, owing to an injunction suit relative to right of way, work on his road has been temporarily discontinued. The trouble is expected to be adjusted within the next few weeks, after which the road, he states, will be rapidly constructed. The proposed route is from Montgomery to a connection with the Chattanooga

Southern, and contract was let in January last for the first ten miles.

Natchez, Miss.—Railroad.—The Mobile, Natchez & Columbia Railroad Co. has been chartered.

Natchitoches, La.—Railroad.—L. Caspari, president, will receive proposals until July 5 for cutting and grubbing about four miles of right of way for the extension of the Natchitoches Railroad; also for furnishing 13,000 eight and nine-foot cypress ties, and for grading and track-laying.

New Berne, N. C.—Railroad.—The Norfolk, Wilmington & Charleston Railroad Co. has accepted a proposition from the city of New Berne and the townships of Craven county, through which the road is to pass, to subscribe \$150,000 to the capital stock of the company. This sum is payable as follows: \$75,000 when the road is completed from New Berne to Washington, \$50,000 additional when the road is built from Washington to Norfolk, and the remainder when completed between New Berne and Charleston.

New Smyrna, Fla.—Railroad.—The Jacksonville, St. Augustine & Halifax River Railroad (office, Jacksonville), now being built to New Smyrna, will, it is stated, build a line from that point to Sanford.

Pemberton, Fla.—Railroad.—It is reported that the Jacksonville, Tampa & Key West Railway Co. (office, Jacksonville) will build the Florida Southern Railroad from Pemberton Ferry to Bartow.

San Antonio, Fla.—Tram-road.—William Sulfenfuss & Co. will build a tram-road.

Savannah, Ga.—Railroad.—It is reported that survey will shortly commence for a railroad from Savannah to Jacksonville, Fla. The supposition is that this work is in pursuance of a deal which is said to have been made between the Jacksonville, Tampa & Key West Railroad Co. (office, Jacksonville, Fla.) and the South Bound Railroad Co., by which the latter is to extend its road to Jacksonville.

Southport, N. C.—Railroad.—Work is progressing on the Brunswick, Western & Southern Railroad, and it is expected to have about twelve miles graded ready for ties by July 15. The only contracts to be awarded by the company will be for ties.

St. Albans, W. Va.—Railroad.—The Coal River Railway Co. has been chartered by T. L. Broun, R. T. Oney, Joseph Russner, Peter Fontaine and others, all of Charleston. The road is to extend from St. Albans up Coal river to connect with the Norfolk & Western. The capital stock is \$1,000,000.

Stone Mountain, Ga.—Electrical Railroad.—The construction of an electrical railroad from Stone Mountain to Atlanta, a distance of about fourteen miles, is contemplated. A preliminary survey will be made by James M. Goldsmith and J. A. Campbell in the interest of Baltimore parties.

MACHINERY WANTED.

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Basket Machinery.—T. K. Huggins, 10½ W. Mitchell street, Atlanta, Ga., wants prices on machinery for making split baskets.

Blower.—Jas. W. Carr, 18th and Cary streets, Richmond, Va., wants a Root or Baker blower for 32-inch cupola.

Boiler.—The Triple Wire Nail Machine Co., Bridgeport, Ala., wants a good second hand No. 5 Sturzett blower for foundry.

Boiler.—John Hickern & Co., Lynchburg, Va., want a 100 horse power boiler.

Boiler and Engine.—Long & Manning, Rippon, W. Va., want to buy an eight or nine horse-power vertical engine and boiler to run elevator.

Boilers.—W. J. Edbrooke, Washington, D. C., will receive sealed proposals until July 14th for furnishing and erecting two high-pressure steam boilers in the United States custom-house, etc., building at St. Louis, Mo. Write for further information.

Boilers.—The Sparta (Ga.) Manufacturing Co. will want boilers. Address J. H. Sloan, president, Piedmont, S. C.

Dry-kilns.—M. M. Scarborough, secretary Board of Trade, Lake City, Fla., wants to correspond with manufacturers of dry-kilns.

Canning Factory.—W. C. Stronach, Raleigh, N. C., wants information concerning canning factory, price of machinery outfit, etc.

Canning Factory.—J. S. Goff & Co., Batesville, Miss., want estimates on outfit of machinery for

canning factory, and any information concerning the operation of such a plant.

Crane.—The Triple Wire Nail Machine Co., Bridgeport, Ala., wants a good second-hand foundry crane of two to five tons capacity.

Cupola.—The Triple Wire Nail Machine Co., Bridgeport, Ala., wants a good second-hand 3 to 5 ton cupola.

Electric Plant.—The Columbia Cotton Mills, Columbia, Ala., will want an electric plant in the fall.

Elevator.—Jno. W. Noble, Washington, D. C., will receive sealed proposals until July 28th for furnishing and putting in place in the Pension Building one hydraulic freight elevator, suitable for passengers also.

Engine.—Geo. H. Snarr, Wheatfield, Va., wants a second-hand eight horse-power mounted engine.

Gang Edger.—The Manly Machine Co., Dalton, Ga., wants prices and full description of a gang edger.

Gasoline Engine.—Foote & Johnson, Wytheville, Va., want a second-hand gasoline engine, six to eight horse-power.

Graphite Machinery.—W. P. Poland, Liano, Texas, wants machinery for working graphite.

Heating Apparatus.—J. C. Horner, Oxford, N. C., wants to contract for hot-water or steam-heating apparatus for a college building.

Hose.—Howard M. Dwyer, Aransas Harbor, Texas, wants prices on hose for irrigating purposes.

Ice Factory.—S. F. Keller, Winchester, Tenn., wants estimates and terms on an ice factory of five tons daily capacity set up at Bocus del Toro, Central America.

Ice Machinery.—Egerton & Ford, Louisburg, N. C., would like to correspond with manufacturers of ice machinery.

Ice-making Machinery.—McNish & Son, Kings-ton, Jamaica, W. I., want estimates on ice-making machinery.

Incubators.—David Gibson, Kingston, Jamaica, W. I., wants prices and information on incubators.

Lathe.—D. L. Dow, Cookeville, Tenn., will want a wood-turning lathe.

Lath Machine.—The Manly Machine Co., Dalton, Ga., wants prices and full description of a lath machine.

Molder.—D. L. Dow, Cookeville, Tenn., will want a molder.

Phosphate Machinery.—The Chicago-Florida Phosphate Co., Ocala, Fla., will need phosphate machinery later on.

Phosphate Machinery.—The Florida Land Rock Co., Ocala, Fla., will need machinery for crushing, washing and drying phosphate rock later on. Address P. J. Peacher, secretary.

Planer.—The Greenbrier Coal & Coke Co., Goodwill, W. Va., wants a second-hand 24-inch wood planer with heading attachment and slotted steel molding head; must be in good condition, with belting complete for setting up.

Pulley Works.—The Sprenkle Pulley Co., Pennington, W. Va., manufacturers of pulleys, will need additional machinery in the near future.

Resaw.—The Manly Machine Co., Dalton, Ga., wants prices and full description of resaw for siding.

Saw Mill.—S. F. Keller, Winchester, Tenn., wants estimates and terms on a saw mill complete f. o. b. cars at Mobile, Ala., having a capacity of 10 to 15 M feet daily (ten hours) for sawing hardwoods, with portable traction engine.

Saws.—D. L. Dow, Cookeville, Tenn., will want a resaw, swing cut-off saw, scroll saw and perhaps a rip-saw table.

Shingle Machine.—The Manly Machine Co., Dalton, Ga., wants prices and full description of shingle machine.

Soda Water Apparatus.—F. Lane, Port Tampa, Fla., wants apparatus for making ginger ale, seltzer water, sarsaparilla, etc.

Surfacer and Matcher.—D. L. Dow, Cookeville, Tenn., will want a double surfacer and matcher.

Tanks.—The Rife Hydraulic Engine Manufacturing Co., Roanoke, Va., wants to obtain prices on wooden tanks of large capacity, especially one of 50,000 gallons and one of 100,000 gallons.

Terra-cotta Pipe.—Dr. Lafferty, Crozet, Va., wants to buy terra-cotta pipe from one to two feet in diameter for aqueduct purposes.

Textile Machinery.—The Columbia Cotton Mills, Columbia, Ala., will want some spinning frames next fall.

Textile Machinery.—The Sparta (Ga.) Manufacturing Co. will want pickers and carding and spinning machinery. Address J. H. Sloan, president, Piedmont, S. C.

Water Works.—Bids are wanted on the construction of a water works system at Greeneville, Tenn. Survey has been made and map of town prepared. Address Jno. Landstreet, Jr.

Wind-mills.—Howard M. Dwyer, Aransas

Harbor, Texas, wants prices on reliable windmills.

A. B. Hooper, of New Site, Ala., wants prices and catalogues of furniture for a 40-room hotel.

Rev. James J. Chiasholm, Winchester, Ky., can be addressed relative to the purchase of furniture, stained glass windows, organ, etc., for a new church under construction.

The Chickasaw Iron Works, of Memphis, Tenn., are in the market for prismatic or reflecting lenses.

The Jones Lime & Stone Co., Cloverdale, Va., wants quotations on flat elm hoops for barrels.

The McGee-Kinsey Manufacturing Co., of Petersburg, Va., desires to correspond with manufacturers of broom handles, also tin locks for brooms.

SOUTHERN FINANCIAL NEWS.

New Banks.

Florence, Ala.—The Merchants' Bank of Florence has been organized with John H. Young, president; M. B. Shelton, vice-president, and S. S. Broadus, cashier.

Llano, Texas.—The Llano National Bank has commenced business with a capital stock of \$50,000.

Tallapoosa, Ga.—The Merchants and Miners' Bank has resumed business after a temporary receivership of about thirty days. The officers in charge are: C. B. Hitchcock, president; O. F. Sampson, vice-president, and E. F. Wright, cashier. The suspension was due to carrying too much paper and not sufficient cash for the volume of business.

Yellville, Ark.—A. S. Layton has organized the Bank of Yellville with a capital stock of \$25,000.

Ashland, Ky.—The Kentucky Iron, Coal & Manufacturing Co. has declared a dividend of 3 per cent.

Baltimore, Md.—The following semi-annual dividends have been declared: George's Creek Coal & Iron Co., \$3 per share; Merchants & Miners' Transportation Co., 4 per cent.; German Bank, 2½ per cent.; Manufacturers' National Bank, 4 per cent.; Drovers & Mechanics' National Bank, 3 per cent.; National Bank of Commerce, 2½ per cent.; Traders' National Bank, 3 per cent.; Third National Bank, 3½ per cent.; People's Bank, 2 per cent.; Citizens' National Bank, 5 per cent., and the Peabody Fire Insurance Co., 5 per cent. The Equitable National Bank has declared a dividend of 3 per cent.; Commercial & Farmers' National Bank, 3 per cent., and the National Howard Bank, 2½ per cent.

Baltimore, Md.—The Stock Exchange will list \$650,000 of the common stock and \$600,000 preferred stock of the Brush Electric Co. of Baltimore.

Fairmont, W. Va.—The Montana Coal & Coke Co., Gaston Gas Coal Co. and the West Fairmont Coal & Coke Co. have executed car trust loans for \$101,200, \$50,000, \$50,000, respectively. Hon. A. B. Fleming is president of each company. The Baltimore Trust & Guarantee Co. is the trustee of the mortgages.

Florence, S. C.—The Florence Loan & Investment Co. has increased its capital stock from \$35,000 to \$150,000.

Florence, Ala.—The town has disposed of \$8,000 of 6 per cent. bonds at par.

Jacksonville, Fla.—The National Bank of Jacksonville, which purchased \$50,000 of the St. John's river improvement bonds at 4 1-10 per cent. premium, has sold part of them at 7 per cent. premium.

Louisville, Ky.—The Farmers and Drovers' Bank will pay a semi annual dividend of 3 per cent.

Macon, Ga.—The Bibb Real Estate & Improvement Co. has declared a dividend of 18 per cent.

New Berne, N. C.—The city of New Berne and certain townships of Craven county intend issuing \$150,000 of 25 year 5 per cent. bonds to aid in the construction of the Norfolk, Wilmington & Charleston Railroad.

New Orleans, La.—The New Orleans National Bank has declared a semi annual dividend of \$15 per share; New Orleans Gas Light Co. a semi annual dividend of \$2.50 per share; New Orleans & Carrollton Railroad Co. a quarterly dividend of \$1.50 per share; Germania Savings Bank a semi annual dividend of \$4 per share; New Orleans City & Lake Railroad Co. a quarterly dividend of \$1.75 per share, and the State National Bank a semi annual dividend of 4 per cent.

New Orleans, La.—The stockholders of the Traders' Bank of New Orleans meet July 7 to consider the reduction of the number of shares from 10,000 to 1,000, and the increase of the par value from \$10 to \$100.

Newport News, Va.—A branch of the United Banking & Building Co. of Richmond has been organized, with Carter M. Braxton president.

Palatka, Fla.—T. B. Merrill, receiver of the First National Bank, announces that a dividend to depositors of from 30 to 35 per cent. will be

paid. The comptroller of the currency recently made an assessment of \$10,000 upon the stockholders of the bank in order to pay its debts.

Raleigh, N. C.—State Treasurer Bain has announced that \$11,300,000 of old State bonds have been funded under the funding act, which expires by limitation July 1, when the funding operations cease; \$1,300,000 of bonds remain unfunded.

Richmond, Va.—The Merchants' National Bank has declared a semi-annual dividend of 3½ per cent.; Richmond, Fredericksburg & Potowmac Railroad Co. a dividend of \$3.50 per share; Richmond & Petersburg Railroad Co. a dividend of \$3.50 per share, and the Petersburg Railroad Co. a dividend of \$3 per share.

Rockwell, Texas.—The First National Bank of Rockwell is reported as in the hands of the bank examiner. The bank was chartered in May, 1888, with a paid-in capital of \$125,000, and two months ago claimed a surplus of \$17,500.

Waco, Texas.—The Equitable Investment & Savings Co. has been chartered with a capital stock of \$50,000.

Waco, Texas.—The Provident Building Association has been chartered by I. M. Pearlstone, M. Lasker, R. B. Parrot and others. The capital stock is \$100,000.

Growth of Norfolk During the Past Three Months.

NORFOLK, VA., June 28.

Editor Manufacturers' Record:

More than one year ago it became very apparent to close observers that Norfolk and her sister cities on this harbor was lacking in the number of private dwelling-houses. In other words, the population on this harbor was increasing faster than it could be accommodated. The result of this discovery was to stimulate the building of a larger number of neat, comfortable dwellings.

During the last quarter fully 500 private dwelling-houses have been built in Norfolk, Portsmouth and Berkeley. The foundations of new dwellings are being laid every day in each ward of these cities. The factory (cotton) at Lambert's Point is ready for work, and at least forty houses for the mill operatives have been erected there. This factory is to employ between 150 and 200 hands. The cotton factory on the Poindexter tract, on the Berkeley side of the river, is receiving its machinery and will soon be ready to begin work. It is to employ about 200 hands, and thirty or more houses have been built or are now in process of erection around or in the near vicinity of this factory.

The wages paid at these factories are such that the hands, if so inclined, are able to save up considerable money. Soon we shall have four of these factories in operation, giving employment to between 800 and 1,000 hands. The work is light, cleanly and entirely respectable, and thousands of white laborers are finding steady and profitable employment at such work as was not thought of by our people ten years ago.

The Norfolk & Western Railroad is making great improvements at Lambert's Point. A roundhouse with eighteen stalls is about being completed. It is made on modern principles, with all modern appliances and conveniences. The material used is brick, with slate roof. A machine shop is also being built 50x100 feet, a smith shop 40x64 feet, a car shop 54x3.0 feet and a woodworking establishment, 54x100 feet. All these buildings were begun during the past ninety days and are now nearly completed, all being built in the most thorough and substantial manner and of the very best material.

The Norfolk & Western people are also building a two-story merchandise warehouse at the point, size 140x705 feet. The pier proper is 790x165 feet, and is thoroughly constructed with an immense number of pine and oak piles, the outer ones, together with the facings of the wharves wherever exposed to the salt water and the "teredo," are creosoted—a process controlled by a company of our citizens.

During the past ninety days the work of filling in about twenty to twenty-five acres

of "flats" (shallow water between the high land and the port warden's line) has been begun by the Norfolk & Western Railroad Co., and is now well along towards completion. The Hydraulic Dredging Co., of Philadelphia, is doing the work, which could not be successfully accomplished by any other known process. The water off the front of the property of the company is deepened and the mud, dirt and clay taken therefrom is dumped on the flats at the rate of 5,000 cubic yards in ten hours' time.

The same company is preparing to deepen the approaches to the warehouses in this harbor, and the mud, clay and dirt taken from the bed of the river at the front is to be dumped into Lake Mahone in the rear, thus practically, as at Lambert's Point, killing two birds with one stone. This is certainly an age of improvement, and Norfolk is getting its full share. The city crematory has but recently been completed, thoroughly tested and turned over to the city, by means of which all the filth of the city, heretofore a nuisance, is destroyed by fire. The Norfolk military companies are now fitting up their armories in the new market-house, which are said to be the best in the United States, with with the exception of one in New York city.

An ice factory has been started in Portsmouth. The capacity is to be twenty tons daily. Ground has been secured and the work of building begun. The artificial ice factory in Norfolk is being run to its full capacity, and there seems to be a splendid field for another one just like it.

To-day the government battle ship "Texas" was successfully launched in this harbor, making the second war vessel launched here during the past ninety days and the fourth large vessel launched in these waters during that period. The launching of the "Texas" brings a large number of people to this city from all portions of the country.

The new market building at the crossing of Church and Queen streets, "The Ballantine Arcade," is nearing completion. It is a beautiful structure. From the profits of his large truck farm, near the city, Mr. Thos. Ballantine has built this very fine building. It is not the only one thus built, as the "Ballantine" building recently erected on Main street is an ornament to any city. We have not the dimensions of the Arcade at hand, but it is several hundred feet long and at least eighty feet wide, built of brick and iron and handsomely and tastefully ornamented.

It is a standing and perpetual monument to the fact that, when well managed, truck farming pays.

There is no city in the United States better supplied with first-class market buildings than Norfolk, and there is no city in the Union that is surrounded by a section of country so well adapted to fill our city markets with such a variety, quality and quantity of soil products.

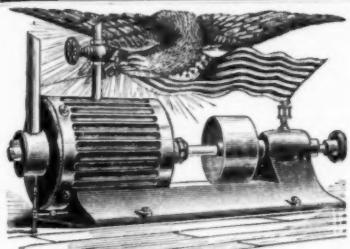
The land near the city supplies us with all the fruits and vegetables, of the best quality, and the nearby waters supply the finest of fish, oysters, clams and crabs. The city with the finest of market-houses and the finest and largest variety of home-grown products to fill these houses is to be congratulated. At all events, the people of the city of Norfolk are to be congratulated at the healthfulness of the city. In the matter of health the city can compare notes favorably with any other city in the Union. The future of the city is assured. Her growth in the past few years has been very satisfactory indeed, and all signs point to the fact that her future growth is to be rapid, permanent and steady. During the past two or more years Norfolk has taken no retrograde step. While hundreds of other sections have had their ups and downs, Norfolk has proceeded quietly, easily, steadily and yet rapidly on her way.

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NOTICE—U. S. Postoffice Building, Danville, Illinois. Treasury Department, Danville, Illinois. Supervising Architect, Washington, D. C., June 24, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock P. M. on the 15th day of July, 1892, and opened immediately thereafter, for all the labor and materials required for concrete and stone footings, etc., for the U. S. Postoffice Building, Washington, D. C., in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent on the building site. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The right is reserved to reject any and all bids, and to waive any defect or informality in any bid or in the requested letters to accompany bids, if it be deemed in the interest of the Government to do so. Proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked "Proposal for Concrete and Stone Footings, &c., for the U. S. Postoffice Building at Washington, D. C., and addressed to W. J. EDBROOK, Supervising Architect.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., June 24, 1892. SEALED PROPOSALS will be received at this office until 2 o'clock, P. M. on the 21st day of July, 1892, and opened immediately thereafter, for all the labor and materials required for the trench excavation, foundations, cut stone and brick work of the basement and area walls of the above named building is hereby extended to 2 o'clock P. M. on the 29th day of June, 1892. W. J. EDBROOK, Supervising Architect.

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NOTICE

Is hereby given that \$210,000 par value of the Eight Per Cent. Debenture Bonds of The American Cotton Oil Company were this day drawn by lot by the Central Trust Company of New-York for redemption pursuant to the conditions upon and subject to which these bonds have been issued. The bonds so drawn are numbered as follows, viz.:

19	522	1175	1036	2061	2626	3287
20	525	1188	1046	2076	2678	3289
35	530	1190	1047	2101	2680	3291
60	588	1191	1049	2109	2708	3295
81	620	1192	1050	2120	2732	3311
101	696	1210	1052	2152	2749	3314
107	712	1255	1074	2165	2779	3355
108	716	1258	1095	2166	2828	3358
170	717	1269	1705	2174	2829	3380
188	736	1263	1754	2179	2856	3400
190	747	1283	1797	2226	2908	3402
237	748	1301	1829	2235	2967	3458
280	751	1348	1858	2238	2978	3458
298	756	1358	1860	2246	2991	3469
321	767	1387	1880	2357	3014	3486
330	822	1406	1880	2360	3024	3496
345	826	1427	1884	2377	3139	3502
348	843	1429	1888	2390	3145	3522
360	847	1449	1908	2397	3149	3547
366	856	1465	1920	2100	3159	3598
367	880	1471	1925	2111	3165	3608
438	897	1484	1932	2424	3167	3647
442	905	1540	1943	2468	3191	3665
465	934	1541	1944	2469	3192	3669
470	985	1542	1974	2479	3193	3750
475	987	1548	1979	2480	3206	3766
477	1033	1568	1986	2522	3215	3800
478	1039	1569	2002	2540	3216	3880
483	1076	1571	2020	2554	3270	3893
500	1173	1624	2055	2577	3280	3934

These Bonds will be paid and redeemed by this Company at par and accrued interest, with 10 per cent. added to the principal thereof, Aug. 1, 1892, upon presentation at the banking house of Messrs. Winslow, Lanier & Co., No. 17 Nassau St., in the City of New-York.

The interest upon the above-described Bonds will cease on and after Aug. 1, 1892.

By order of the Board of Directors,

JUSTUS E. RALPH, Treasurer.

Full payment of the above-described bonds, with interest at eight per cent. per annum to Aug. 1, 1892, being \$1,120 for each \$1,000 bond, will be anticipated upon presentation at our office, subject to an allowance of interest at 3 per cent. per annum for account of The American Cotton Oil Company.

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One "BATES" ELEVATOR.

All in good working order; immediate delivery
JOHN C. GRAFFLIN CO.
213 South Street, BALTIMORE, MD.

FOR SALE.

The entire MACHINERY, FIXTURES, UTEN-
SILS and APPARATUS generally of a well-
appointed FRUIT and VEGETABLE CAN-
NERY. Add ss,

CHARLES J. BONAPARTE
216 St. Paul Street, BALTIMORE, MD,

**LIST OF DISPLACED WESTING-
HOUSE STANDARD AUTOMATIC
ENGINES, IN GOOD RUNNING
ORDER, FOR SALE CHEAP BY
THE SOUTHERN COTTON OIL
CO., GIRARD NATIONAL BANK
BUILDING, PHILADELPHIA, PA.**

4 60 horse-power Engines, at New Orleans, La.
1 150 horse-power and one 60 horse-power, at
Montgomery, Ala.
2 150 horse-power, at Atlanta, Ga.
2 150 horse-power, two 45 horse-power and one
60 horse-power, at Savannah, Ga.
2 45 horse-power, one 60 horse-power and one
150 horse-power, at Columbia, S.C.
1 75 horse-power, at Houston, Texas.

**ALSO LIST OF DISPLACED HYDRAULIC
PUMPS, IN GOOD RUNNING ORDER,
MADE BY THE SMITH & VAILE CO.
AND NOW AT THE FOLLOWING MILLS
OF THE SOUTHERN COTTON OIL CO.:**

Houston, 10; New Orleans, 8; Montgomery, 5;
Atlanta, 5; Memphis, 5; Little Rock, 5; and
Savannah, 1—in all 39.

RECEIVER'S SALE.

GEORGIA—FULTON COUNTY.

In pursuance to a decree of the Superior Court of Fulton county, Ga., passed on May 14th, 1892, I will sell at public outcry to the highest bidder, at Fulton courthouse, in the city of Atlanta, Ga., on Tuesday, July 5th, 1892, within the legal hours of sale, the complete plant of the

OGLETHORPE MANUFACTURING CO., comprising a tract of land in the 16th district of originally Henry (now DeKalb) county, Ga., part of lot No. 16, containing 19 1/2-1,000 acres, described as follows: Beginning at a stone pillar under the bridge over South river and running north 51/2 degrees, east 12 30 100 chains to a stake; thence north 36 1/2 degrees, west 11 37 100 chains to a stake; thence south 71 degrees, west 16 chains to the river; thence south 10 degrees, east 2 40 100 chains; thence south 54 degrees, east 13 65 100 chains to the beginning point, together with the right at all times to draw from South river on the premises above described by means of dams, water-courses, pipes or other mechanical appliances, as much water as will pass through an orifice or gauge, which gauge shall be made of wood or iron, having an opening area of not less than seven square feet, or 1,000 square inches, and shall be placed not less than four feet below the surface of the water in the raceway or dam, and the dam shall be so constructed that there shall be a fall or head of water not less than twenty five feet between the surface of the water in the dam and the surface of the water in the tail race below the water-wheel, and the said dam shall be kept in repairs by said Oglethorpe Manufacturing Co and the parties owning land on the opposite side or using water from said dam; the expense attending said repairs to be equally divided between said company and said other parties. Said land has on it the cotton mills and machinery held by said company.

The improvements on said land consist of a

COTTON YARN MILL.

A plant with 3,888 spindles and preparation complete in main building, which is a frame building 79x110 feet, two and one-half stories in height and covered with iron; picker room 20x60 feet, detached; ware or store room 22x60 feet, forty feet distant from picker room; large tank supplying picker room and factory sprinklers, and eleven operatives' tenement houses.

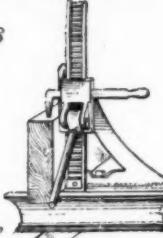
The terms of the sale will be one-third cash and the balance in two equal payments due respectively at six and twelve months, for which notes bearing 7 per cent. interest will be taken, the purchaser having the privilege of paying all cash. The sale will be subject to confirmation by the court. The purchasers will become a party to the suit only for the purpose of collecting the purchase money, and he will be required to insure the property to the amount of the unpaid purchase price.

For full particulars address

M. M. WELCH, Receiver,

No. 8 East Wall Street.

ATLANTA, GA., May 17th, 1892.

Steel Saw Mills**Steel Head Blocks****Steel Set Works****Steel Set Shaft****Steel Out & Out**

Being compact run easier, being strong last longer, being simple **COST LESS MONEY** than any Saw Mill in the Southern States.

Manly Machine Co.,
FOUNDERS AND MACHINISTS, DALTON, GA.

HARD WOOD We have a large lot of very fine OAK, POPLAR, SWEET GUM and SHELLBARK HICKORY, which we are prepared to cut to order. Millmen and others desirous of handling such wood will find it advantageous to communicate with us.

HUNDLEY BROS. & CO.,
Contractors, OXFORD, N. C.

For Sale—Mills and Timber Lands.

Valuable Lumber and Shingle Mills, good facilities for foreign and domestic shipments. Well Timbered pine and Cypress lands on Atlantic Coast. Apply to,

"A. B. C."

Care of MANUFACTURERS' RECORD.

**FOR SALE—A WELL EQUIPPED SASH,
DOOR, BLIND AND PLANING MILL,
IN FIRST-CLASS ORDER, AND LOCATED
IN ONE OF THE FLOURISHING TOWNS
OF NORTH CAROLINA. POPULATION
ABOUT 4,000. NO OPPOSITION. GOOD
SHIPPING FACILITIES. HEALTH OF THE
COMMUNITY UNSURPASSED IN THE
SOUTH. FOR FURTHER PARTICULARS
ADDRESS "PLANING MILL."**

CARE MANUFACTURERS' RECORD.

CHEAP—One 30 H. P. Erie M'g Co.'s "New Economic" HORIZONTAL RETURN FLUE TUBULAR BOILER, with Hancock Inspirator, say 50 feet of smokestack, whistle, water and steam gauges, etc., one 8x10 VALLEY AUTOMATIC ENGINE (20 to 30 H. P.) specially adapted for dynamo work. All in perfect running order. PRICE \$500. Can be seen in operation at printing office of L. GRAHAM & SON, 99 to 103 Gravier street, New Orleans, La., until July 1.

SECOND-HAND MACHINERY

In First-Class Condition.

1 26 in. Egan Double Surfacer Rotary Bed.
1 Waymouth Lathe, made by Rollstone Mch. Co.
1 55 in. Sturtevant Shaving Exhauster.
1 26 in. Old Style Whitney Scraper and Grinder.
1 30 in. Latest Style Whitney Scraper and Grinder
Chase Mfg. Co. Latest Style Ch. ir Back Saw.
1 Baxter D. Whitely Chair Back Saw.
1 Fly Wheel 63 in. diam. by 18 in. face, 5 1/2 in. bore.
1 Fly Wheel 72 in. by 26 in., 5 1/2 in. bore.
1 Fly Wheel 72 in. by 32 in., 5 1/2 in. bore.
Shaft and boxes for above fly wheels.

BAXTER D. WHITELY,
WINCHENDON, MASS.

Changed Weekly.**FOR SALE.**

20 BARRELS MACHINERY OIL, 27 cents per gallon. Will send barrel on trial, and if not satisfactory, return, will pay the freights.

N

Several carloads new STREET RAILWAY CHAIRS, 12 cents each, to close out what have in stock.

O

COFFEE ROASTING PLANT complete, used but two months, capacity (4,000 pounds per day) being too small.

P

2 Centrifugal Pumps, new.
20 Tanks, different sizes and kinds.
2 New Rock Crushers. 1 second hand.
60 Dynamos, new, half price, guaranteed.
Electric Combination Car.
10 Otto Engines, 2, 7 and 10 h. p.
2 Bolt Headers, new, guaranteed.
2 Centrifugal Pumps, new, low price.
8 Steam Pumps, different makes and sizes, all guaranteed.
2 35 h. p. Hor. Engines, low price, new.
5 3 and 5 Upright Engines, new, guaranteed.
90 Tons 16s, new. Several lots of second hand.
3 Rock Drills, 1-34 to 1/2 in.
2 Headlights, Locos. new, half price.
1 Saw Mill, new, low price.
5 Carloads Soil Pipe, Baltimore delivery.

When in want of supplies, especially of new

that can be had under the market, let me hear from you. Much of the material I offer is new and perfect, but, owing to circumstances, owners want to realize promptly, and will accept lower figures.

H. H. MANSFIELD,

126 Liberty Street, NEW YORK.

RARE CHANCE.

Machine Shop

(49) forty-nine SECOND-HAND Machine Tools, in Excellent Condition.

FOR SALE

SINGLY.

FITCHBURG AND BLAISDELL } Makes.

COMPRISSING

LATHES,
DRILLS,
SHAPERS,
PLANERS.

EN. B.—Seven of these Tools were sold last week, order promptly or REPENT.

ADDRESS

PENNSYLVANIA MACHINE CO., LIMITED.

31 N. Seventh Street, Philadelphia, Pa.

(Successors to H. B. Smith Machine Co., Phila.)

Corliss Automatic Engines

ALSO

Electric Light, High-Speed and Slide Valve Engines.

In first-class condition for immediate delivery at very low prices.

Corliss Engines, one each, 30x60, 30x72, 32x48, 26x48, 23x36, 20x48, 18x48, 16x42, 14x48, 12x36, Buckeye Engines, one each, 11x20, 11x21, 14x24, 15x18. One pair of Woodruff & Beach Engines, automatic cut-off, 20x48. Slide-Valve Engines, 10x16 11x24, 8x8, 11x16, 12x24, 7x14 and 14x16. Steel Boilers, assorted sizes, 50, 55, 60, 80 and 100 horse power—all insured for 80 pounds. Fan Blowers, 8 feet; Ingersoll Rock Drills; Steam Pumps—Worthington, Blake, Cameron and Niagara; Iron Lathes, 4 inches by 5½ feet; 7,000-gallon tank, and smaller sizes; Buckley and Jet Condensers; Hoisting Engines, all in good working condition. Send for catalogue.

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MACHINERY IN STOCK.

ENGINE LATHES.—62 inches x 22 feet; 88 in. x 31 ft.; 50 in. x 20 ft.; 48 in. x 12 ft.; 32 in. x 12 ft.; 29 in. x 15 ft.; 28 in. x 28 in.; 20 ft.; 1 each 24 x 10 ft., 12 ft. and 16 ft.; 1 each 17 in. x 6 and 8 ft.; 1 each 16 in. x 6, 8 and 10 ft.; 1 each 14 in. x 6 and 8 ft.; 6 12 in. x 5 ft.; 1 each 11 in. x 4 and 5 ft.; 1 each 10 in. x 4 ft., power or foot-power; 16 in. x 6 ft., 15 in. x 6 ft., 14 in. x 5 ft. Fox Monitor Lathes; 15 in. x 6 ft. Square Arbor Fox Lathe; 1 each 12 in., 14 in. x 6 ft., 15 in. x 6 ft., 18 in. x 6 ft. Turret Lathe; 1 each 15 in. x 6 ft., 16 in. x 6 ft., 18 in. x 6 ft. and 8 ft. 21 in. x 8 and 10 ft. Engine Lathe Taper.

Iron Planer, 16 in. x 16 in. x 3 ft.

Planer, 20x20 in. x 4 ft. and 22x22 in. x 5 ft.

24x24 in. x 5½ and 6 ft.

32x32 in. x 10 ft.

32x32 in. x 10 ft.

44x44 in. x 22 ft. and 50x50 in. x 17 ft.

30x30 in. x 9 ft., with one head.

42x42 in. x 12 ft., with two heads.

Fraction Shapers, 15 in., 22 in., 32 in.

Crank Shapers, 12, 13, 15, 17, 20, 24, 28, in. adj. st. ke., 1 each Nos. 1, 2, 3, 4 Wire Feed Screw Machines.

1 each Nos. 5 to 8 Screw Machine. Power Feed.

each 2, 3 and 6 Spindle Gang Drills.

Crank Planers, 12 No., Lincoln Pat. Millers.

each Nos. 51, 52 and 53 Ferracut Presses.

No. 5 Stiles & Parker Geared Press.

No. 24 in. Fowler Press, 10 Foot and Power

No. 1 Bliss Foot Presses. [Presses.]

12 Punching and Shearing Machines, assorted.

Bolt Cutters, each ¼ to 1 in., and ½ to 2 in.

30 in. Gear Cutter.

each 60 and 70 in. Radial Drill.

New Horizontal Boring Machine with facing attachment. Newark Mach. Tool Co., makers.

48 in. Gear Cutter. 1 Power Mortising Machine.

50 in. Pulley Lathe, 2 Profiling Machines.

10x12 in. Valley Automatic Engine.

24 in. Upright Drill. 3 Cam Cutters.

Send for List of New and Second-Hand Machinery.

PRENTISS TOOL & SUPPLY CO.
59 S. Canal St., Chicago, 115 S. Liberty St., N.Y.

NEW TOOLS

For Immediate Delivery.

ENGINE LATHES, 14 to 38 in. swing.
SHAPERS, crank and Geared.
DRILL PRESSES, 20 to 40 in. swing.
PLANERS, MILLING MACHINES, TURRET,
FOX and SPEED LATHES.
FOOT and SPEED LATHES, PUNCHES, Etc.

Write for complete lists.

LODGE & WATKINS MACHINE TOOL CO.

WORKS, CINCINNATI, O.

Eastern House, 64 Courtlandt Street, New York. Western House, 68 & 70 S. Canal St., Chicago. Store—S.E.Cor. Water & Market Sts., Pittsburgh. Office, No. 23 and 25 Purchase Street.

See list of Second-Hand Tools next issue.

SECOND-HAND MACHINERY.

1 Planer, planes 16 ft. long, 62 in. x 48 in.
1 Planer, planes 5 ft. 24x24 in.
1 Lathe, Boring and Turning, 15 ft. bed, 84 in. swing.
1 Engine Lathe, 16 ft. b-d, 28 in. swing.
1 Engine Lathe, 10 ft. bed, 25 in., raised to 32 in.
1 Engine Lathe, 11 ft. bed, 22 in. swing.
1 Engine Lathe, 10-ft. bed, 28 in. swing. Ames make.
1 En. Lathe, 8-ft. bed, 21 in. swing. Worcester make.
1 26-in. Stevens' Pulley Lathe.
1 Automatic Rack-Cutting Machine.
1 General Bar Iron Shears, cuts 4x14 in.
1 in. stroke Friction Shaper.
1 16-in. stroke Heavy Crank Shaper.
1 475 lbs. Merrill Patent Drop Hammer.
1 36-in. Back Gear New Haven Drill.
1 11 ft. 24 in. Stover Dimension Planer.
Send for list Second-hand tools.

NEW YORK MACHINERY DEPOT,
Brooklyn Bridge Store, 16, New York.

Machinery, New and Second-Hand For Sale.

96 in. swing, 26 ft. bed, b'd raised to sw'g 13 ft. A. 50 in. swing, 30 ft. bed, for rolling mill forg's, new.
32 in. swing, 12, 14, 16, 18 ft. beds. New.
28 in. swing, 12, 14, 16, 18 ft. beds. New.
21 in. swing, 10 and 12 ft. beds. New.
20 in. swing, 7½ and 8 ft. beds. Ames. Good.
16 in. swing, 6 and 8 ft. beds. Several makers.
15 in. swing, 6 and 8 ft. beds. Several makers.
14 in. swing, 8 ft. bed. Several makers.
15, 18 & 21 in. st. ke. Crank shapers, step toe. New.
9 in. 16 in. stroke Crank shapers. Good order.
24 in. stroke. Gird shapers, step toe. Good order.
20 in., 22, 24, 28, 30 in. Dills. New & 2d-hand.
24 in x 4 ft., 5 ft., 6 ft. Planers.
26 in x 6 ft. Planers.
35 in. x 10 and 12 ft. Planers.
54 in. x 48 in. x 12 ft. Pl. Pl. Hewes & Phillips, 2 h'ds.
54 in. x 42 in. x 21½ ft. Planers.
62 in. x 48 in. x 17 ft. Planers.
120 in. x 20 in. x 16 ft. Planers. Betts, 2 h'ds.
10 ft. horse power Westinghouse Standard Engine.
11x18 horizontal slide valve Engine.
2000 lb. ELEMENT STEAM HAMMER.
10 lb. Brad ey Helve Hammer.
Car axle Femen.
1½ and 1½ Box Cutters.
9 and 12 in. stroke Slotting Machines.
No. 3 Stiles Punch Pre's, Geared.
50 in. Bliss Squaring Shears, lot boiler shop tools.
600 Plate Machine Co. 120 Broadway, N.Y.

FOR SALE.

SECOND-HAND IRON TOOLS.

1 No. 4 Garvin Milling Machine, with 2 Arbors and 13 Milling Cutters.
1 24 in. x 24 in. x 5 ft. Iron Planer.
1 25 in. x 14 ft. Iron Lathe.
1 18 in. x 6 ft. Iron Lathe.
1 24 in. Back Geared Drill.
1 Centering Machine.
1 Sturtevant No. 6 Pressure Blower on Bed Plate.

Above Tools are in First-Class Order.

JAMES JENKS,

Dealer in Machinery. DETROIT, MICH.

FOR SALE.

15 ton 36 in. gauge Saddle Tank Locomotive, equal to new.

11 in. x 36 in. Corliss Engine.

New 11 to 15 horse power Automatic Engines.

30 horse power Hoisting Engines, new.

Locomotive style Boilers, 60, 70, 80, 90 and 100 horse power.

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NORRISTOWN, PA.

FOR SALE—PART OF MACHINERY in Caning-house of the late John F. Lowekamp, at Jesup's, on Washington Branch B. & O. R. R., viz.: One Numens Pea Separator, One Scott & Chisholm Pea Huller, two pairs Square Shears, one Cap Press and Die, one Bottom and Top Press and Die, one pair Rollers, eighteen Fire Pots, one Drop Cutter, two pairs Solder Molds, one Anvil, one Tomato Filler, etc. Apply to J. H. LOWEKAMP, Jesup's, Md.

ROLLER CARDS FOR SALE.

25 40-INCH FULL ROLLER CARDS, Higins make, seven workers and five strippers, 22-inch doffers,ickerling and fast combs; in excellent condition; good clothing. May be seen in Richmond, Va., now running. For price and details address

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Cotton and Woolen Machinery

Of every description bought, sold and exchanged. Catalogues issued quarterly.

O. B. ARNOLD,

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Second-Hand Machinery FOR SALE.

Steam Passenger and Freight Elevator complete, with double engines; drum walnut cab; all attachments complete; cost \$3,400, for \$300.

Two Buckeye Engines, automatic, 65 and 35 H.P.

Wood Planers 26 in.; endless bed and 24 in. pony complete; 36 in. Band Saw and Axe-Handle Lathe.

Two-Flue Boilers, 20x40, 24x48, complete, and 25 H. P. steel fire box Boiler.

Engines 10, 12, 14, 16, 20, 30, 35, H. P. complete.

Steam Pumps, Shafting, Pulleys, Hangers, Belting, Ingersoll No. H Rock Drill

Iron Planers 24x24x5 ft. Engine Lathes, nearly new, 18 in. x 6 ft., and 14x5 Universal Milling Machine, complete. Hand power elevator pillar, floor scales.

1 pair 10 horse power Hoisting Engines.

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104 East Pearl Street, CINCINNATI, O.

NEW AND SECOND-HAND MACHINERY

Bought, Sold and Exchanged.

COTTON, WOOLEN AND KNITTING MACHINERY.

Jeweler Tools, Engines and Boilers.

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LOCOMOTIVES, DUMMIES, CARS,

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Complete outfit, Power Plants, Belting, etc.

Contracts taken. Write for prices.

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LOCOMOTIVES AND CARS OF ALL KINDS.

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Rails, Saws and Drills.

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New and Second Hand; for CASH or on EASY TERMS on the CAR TRUST PLAN.

Engines, Boilers, Woodworking Machinery, FACTORY and MILL SUPPLIES.

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44½ Marietta Street, Atlanta, Ga.

Contracts taken for Surveying, Constructing and Equipping Logging, Electric and Dummy Lines, and Water Works Plants.

NEW YORK EQUIPMENT CO., 15 Wall Street, New York,

WE HAVE FOR SALE FOR IMMEDIATE DELIVERY AND IN FIRST CLASS ORDER,

Six Standard Gauge Passenger Type Locomotives, 16 in. x 24 in., and 17 in. x 24 in. cylinders.

A large number of 20 and 25 ton Coal and Flat Cars.

In addition to our large permanent stock of equipment of both standard and narrow gauges.

FOR CASH, or on easy terms, on the CAR TRUST PLAN.

FOR SALE.

For immediate delivery, a number of

STANDARD GAUGE LOCOMOTIVES, now in use on the NORTHERN PACIFIC RAILROAD.

Cylinders, { 15 in. x 22 in., 15 in. x 24 in.,

Weight 59,000 to 72,000 pounds.

TWO NARROW GAUGE, 6 wheel Locomotives.

Cylinders, 12x18 and 12x24 inches.

Weight 48,000 to 74,000 pounds.

Full description on application.

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200 TONS 52-LB. STEEL, for delivery in Pittsburgh. Also some 16, 20 and 30-lb. rails for Western or Southern delivery. All selected and in good condition to relay.

ALSO ALL WEIGHTS OF NEW RAILS.

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GEORGE PLACE.
Late the George Place Machinery Co.
Equipment of Railway and Car Works
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2,000 tons 52-pound Steel, 400 tons 35-pound Iron, 200 tons 30-pound Iron, all good order, with splices. Two six driver 3-ft. gauge Engines. Four standard gauge Freight Engines.

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STEEL RAILS

And Track Material complete for Logging and Mining Roads and Industrial Enterprises on the

Instalment Plan.

Payment, cash margin 25 per cent., balance monthly for 24, 36 or 60 months. Also

Locomotives and Cars

On same terms. Second-hand Rails purchased.

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Rails, Fastenings and Rolling Stock; Bar, Band, Hoop and Sheet Iron; Wire and Wire Nails; Steel and Iron Cut Nails; Bar and Tool Steel; Horse and Mule Shoes; Wire Rope and Machined Cotton Waste; Wrought Iron Pipe; Iron and Steel Roofing; Blasting Powder.

STEEL RAILS, FASTENINGS and

ALL CLASSES OF NEW and SECOND-

HAND EQUIPMENT.

For New York delivery.

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MANUFACTURERS' RECORD.

SOUTHERN LUMBER DIRECTORY.

A List of Leading Lumber Dealers and Manufacturers in the South.

This list of representative Southern lumber merchants and manufacturers is published for the benefit of those who desire to reach responsible houses in this branch of business in the South. Readers of the MANUFACTURERS' RECORD who have occasion to correspond with any of the firms mentioned below will confer a favor by mentioning this paper.

Yellow Pine.

I. B. Gordon & Co., Alpine, Ala.
Vi Rica Lumber Co., Aniston, Ala.
J. R. Adams & Sons, Birmingham, Ala.
Hawkins & Smith, Birmingham, Ala.
C. T. Hughes & Co., Birmingham, Ala.
Riddle & Simpson, Birmingham, Ala.
Southern Supply Co., Birmingham, Ala.
Mahary & Jones, Bozeman, Ala.
D. W. & U. Blacker, Brewton, Ala.
W. W. Weaver, Castleberry, Ala.
J. A. Dudley, Clanton, Ala.
O. A. Duke, Clanton, Ala.
L. B. Wells, Clanton, Ala.
H. C. Higman & Co., Decatur, Ala.
Dunham Lumber Co., Dunham, Ala.
Gadsden Lumber Co., Gadsden, Ala.
Tuscaloosa Lumber Co., Hull, Ala.
Bay City Lumber Co., Mobile, Ala.
E. R. Vaughan, Mobile, Ala.
Alabama Lumber Syndicate, Montgomery, Ala.
S. P. Alen & Co., Montgomery, Ala.
W. A. Drives & Co., Montgomery, Ala.
Moore, Kirkland & Co., Montgomery, Ala.
Wagar Lumber Co., Wagar, Ala.
W. W. Wadsworth, Wadsworth, Ala.
Philadelphia Lumber Co., Philadelphia, Ark.
Empire Lumber Co., Ashton, Ark.
Long Bell Lumber Co., Buckner, Ark.
Cotton Belt Mill Co., Cotton Belt, Ark.
Eagle Lumber Co., Eagle Mills, Ark.
Red River Lumber Co., New Lewisville, Ark.
A. J. Neimeyer Lumber Co., Waldo, Ark.
Fordyce Lumber Co., Fordyce, Ark.
The Florida Phosphate Co., Ltd., Phosphoria, Fla.
J. S. Betts & Co., Ashburn, Ga.
Donaldson Lumber Co., Donaldsonville, Ga.
Ocean Springs Lumber Co., Ocean Springs, Miss.
Perkins Manufacturing Co., Augusta, Ga.
Stillwell, Millen & Co., Savannah, Ga.
F. F. Putney, Hardaway, Ga.
Charles Bewich & Co., Hazelhurst, Ga.
Alderfer & Bull, Isabella, Ga.
Hogg & Winger, Kensington, Ga.
J. A. Williams, Sumner, Ga.
A. J. Duncan & Co., West Bowersville, Ga.
W. E. Mayne, Carpenter, Ky.
P. Hendrickson, Conant, Ky.
Perkins & Miller Lumber Co., Ltd., Westlake, La.
Lock-Moore & Co., Ltd., Westlake, La.
R. J. Aycock, Longstreet, La.
C. P. Brasher, Marthaville, La.
Joseph Horst, Maugansville, Md.
Elliott, Crawford & Co., Myrtle, Miss.
P. B. Myers & Son, Myrtle, Miss.
B. J. Cansey, West, Miss.
Cary E. Spence, Pass Christian, Miss.
Keystone Lumber & Imp. Co., Rogue Chitto, Miss.
The Greenville Land & Imp. Co., Greenville, N.C.
Gaillard Lumber Mfg. Co., Greensboro, N.C.
The A. F. Withrow Lum. Co., Millboro Depot, Va.
U. B. Simpson & Son, Naruna, Va.

North Carolina Pine.

Thomas J. Jones, Council's Station, N. C.
Goldston Lumber Co., Goldsboro, N. C.
G. Vyne & Son, Wilkesboro, N. C.
John Hickson & Co., Lynchburg, Va.

Cypress.

Morris & England, Keo, Ark.
Cypress Lumber Co., Sherrill, Ark.
T. O. Wilson Lumber Co., Tillar, Ark.
Nuchner & Brown, Peach Orchard, Ark.
Moine Lumber Co., Helena, Ark.
J. M. Milburn & Bro., Greenway, Ark.
Lawless & Kyle, Franklin, La.
Louisiana Cypress Lumber Co., Harvey, La.
Lutcher & Moore Lumber Co., Lutcher, La.
Callahan & Lewis Mfg. Co., Patterson, La.
W. R. Emerson, Emerson, Fla.
J. C. Burleigh, Midland, Fla.
F. S. Bamberg, Jasper, Fla.
S. J. Temple, Temple's Mills, Fla.
J. P. Little, Sumner, Fla.
Geo. H. Barker, Waldo, Fla.
A. A. Bunnell, Rawlerson, Fla.
Windemere Land & Lumber Co., Windemere, Fla.
Kelly, Cosby & Co., Jug Tavern, Ga.
Dietrich & Dopsone, Lenox, Ga.
W. T. M. Arthur, McArthur, Ga.
W. H. Moxley & Co., Macon, Ga.
W. R. Peterson & Co., Wadley, Ga.
McEwen & Murray, New Orleans, La.
Hanson & Smith, Wilmington, N. C.
J. C. Fulton, Aransas Pass, Texas.
Calcasieu Lumber Co., Austin, Texas.
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Hill & Mitchell, Center Star, Ala.
W. A. Koeppl, Coal, Ala.
Decatur Lumber Co., Decatur, Ala.
H. S. Freeman, Decatur, Ala.
Black Warrior Lumber Co., Demopolis, Ala.
Clifton & Hendrix, Jasper, Ala.
Elliott & Carter, Jasper, Ala.
W. M. Beatty, Austin, Ala.
J. W. Ray, Arkadelphia, Ark.
Doshi Lumber Co., Arkansas City, Ark.
Batesville Lumber Co., Batesville, Ark.
Russell & Elde, Beebe, Ark.
South's Hardwood Lumber Co., Black Rock, Ark.
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Kelley & Wells Lumber Co., Newport, Ark.
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J. M. Meffert, Lowell, Fla.
Ray & Geise, Bronwood, Ga.
Montford & Mitchell, Butler, Ga.
Glasgow & Henderson, Casville, Ga.
Green & Eshum, Clay Hill, Ga.
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Greer Bros., Adair, Ga.
D. T. Harris, Dixon, Ga.
W. T. Opie, Dover, Ga.
A. J. McMullen, Hartwell, Ga.
Matthews & Anderson, Knoxville, Ga.
R. W. Ballard, Newton Factory, Ga.
O. W. Wadley, Rogers, Ga.
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G. W. Hummer, Adairville, Ky.
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Snider Bros., Berea, Ky.
Gilson & Hale, Flat Lick, Ky.
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Fetter Cochran & Co., Louisville, Ky.
J. C. Williamson, Mouth of Pond, Ky.
Waters & Bringhurst, Pineville, La.
J. H. McBride, Winnfield, La.
The Loomis & Hart Mfg. Co., Chattanooga, Tenn.
Smith & Co., Reedy Ripple, W. Va.
Shelly & Wrigman, Romney, W. Va.

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J. Bradley, Hartsell's, Ala.
Conecuh & Patsaliga Lumber Co., Luverne, Ala.
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Florida Shingle Mills, Brooksville, Fla.
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Wm. A. McCann, Jacksonville, Fla.
A. G. Russel, Oviedo, Fla.
Little & Chapman, Rosewood, Fla.
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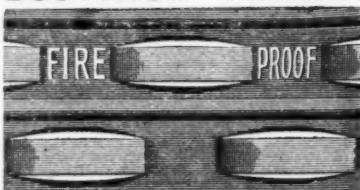


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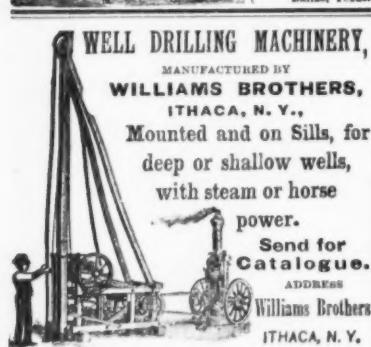
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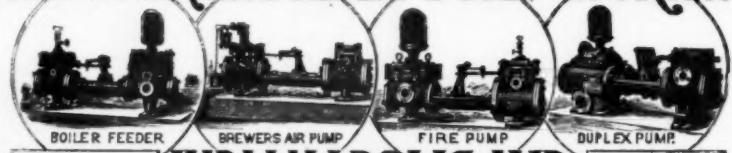
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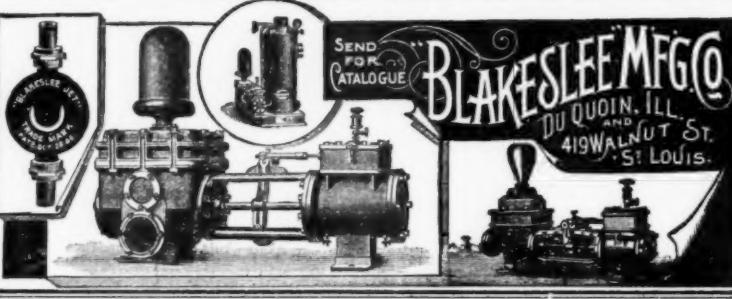
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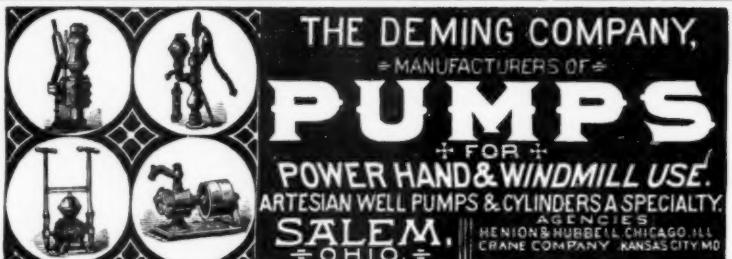


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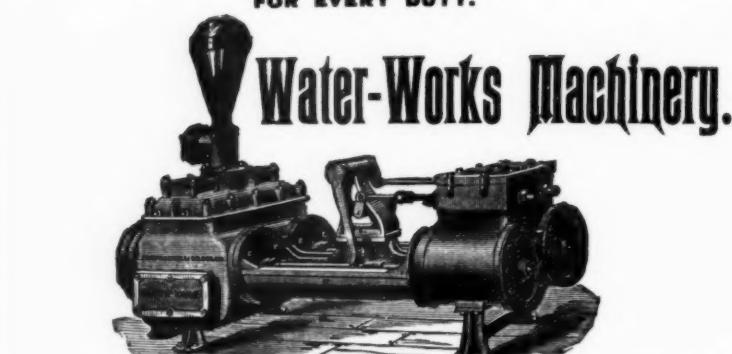
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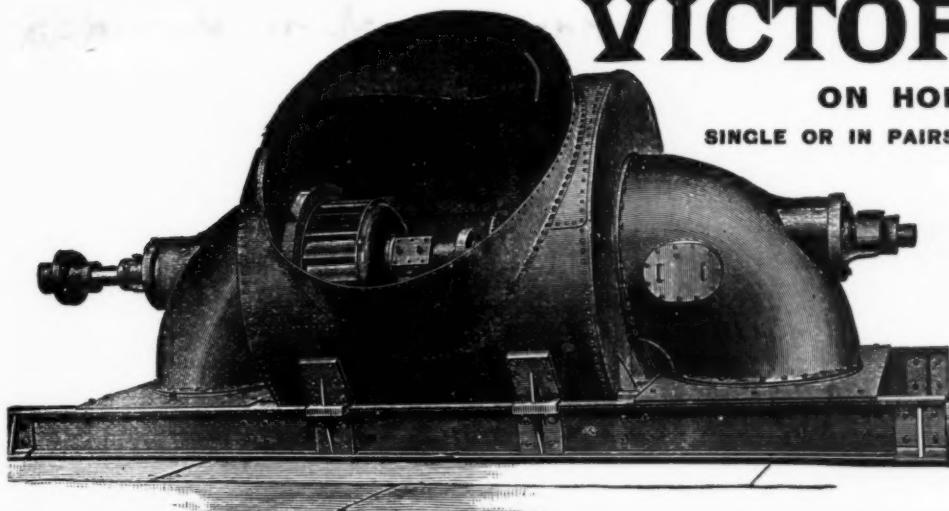
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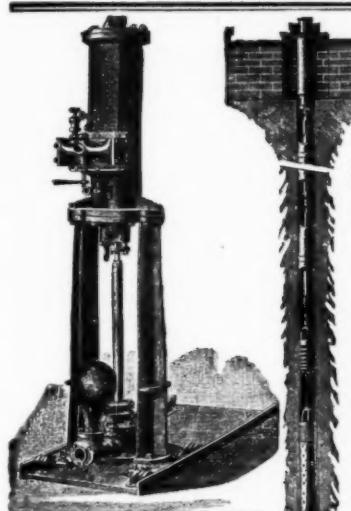
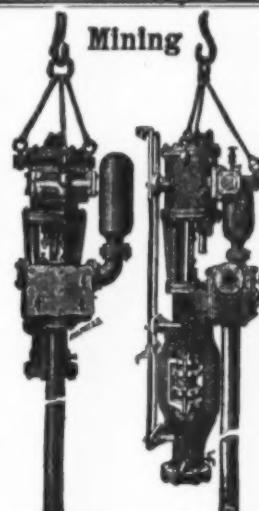
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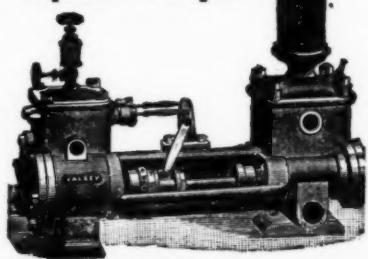
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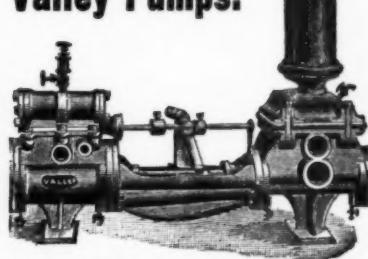
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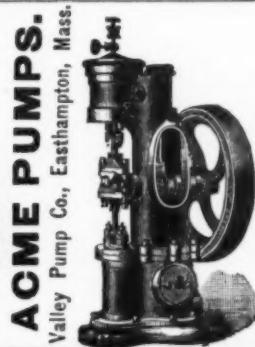
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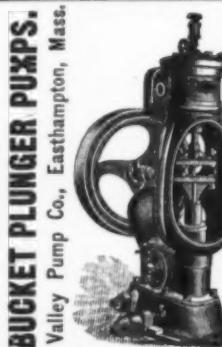
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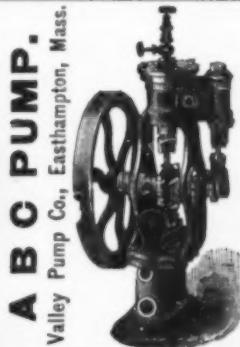
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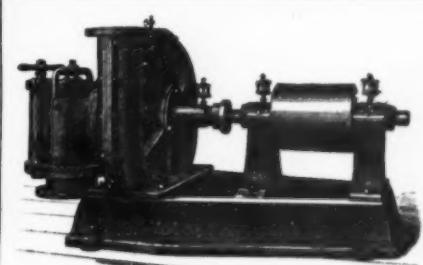
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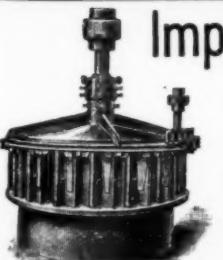


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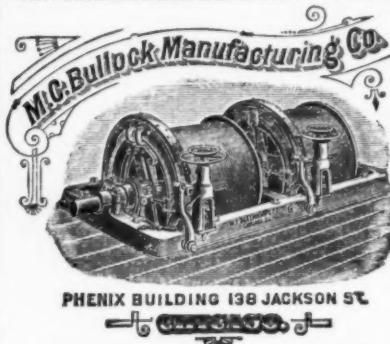
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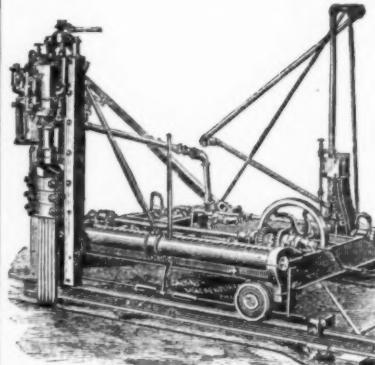
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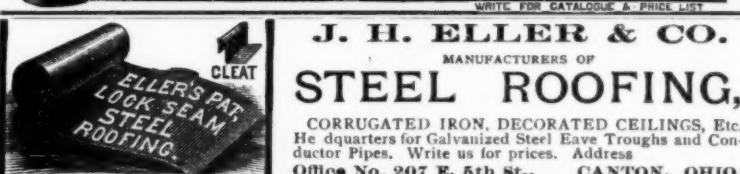
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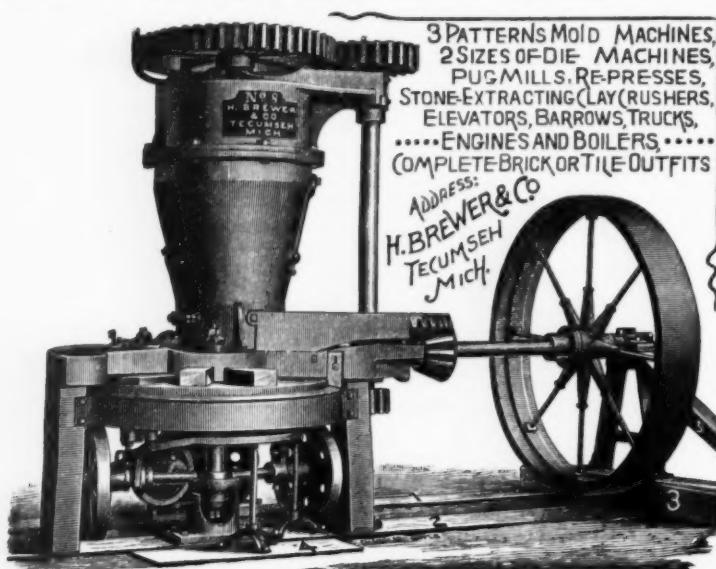
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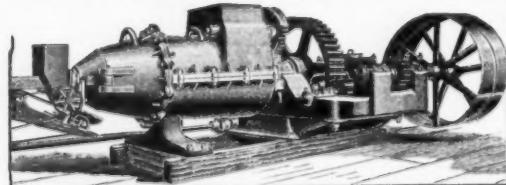


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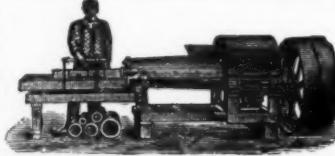
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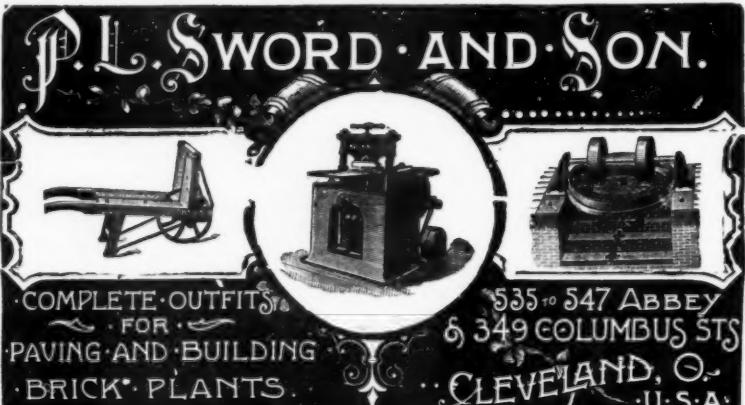
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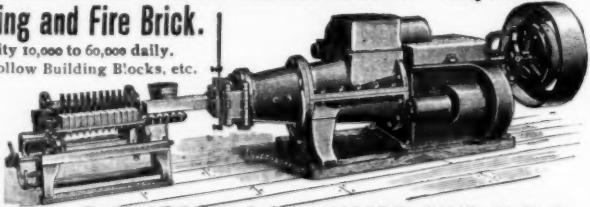
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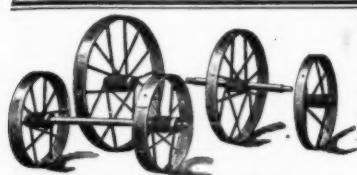
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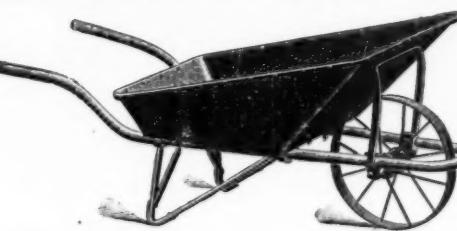
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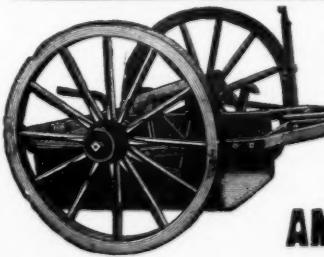
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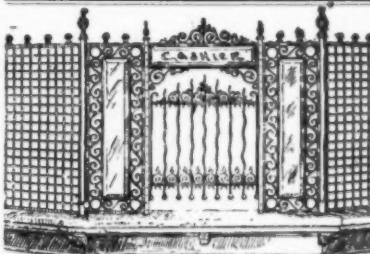
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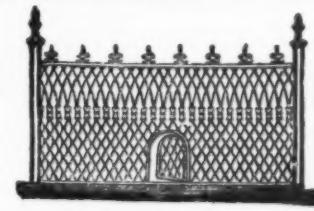
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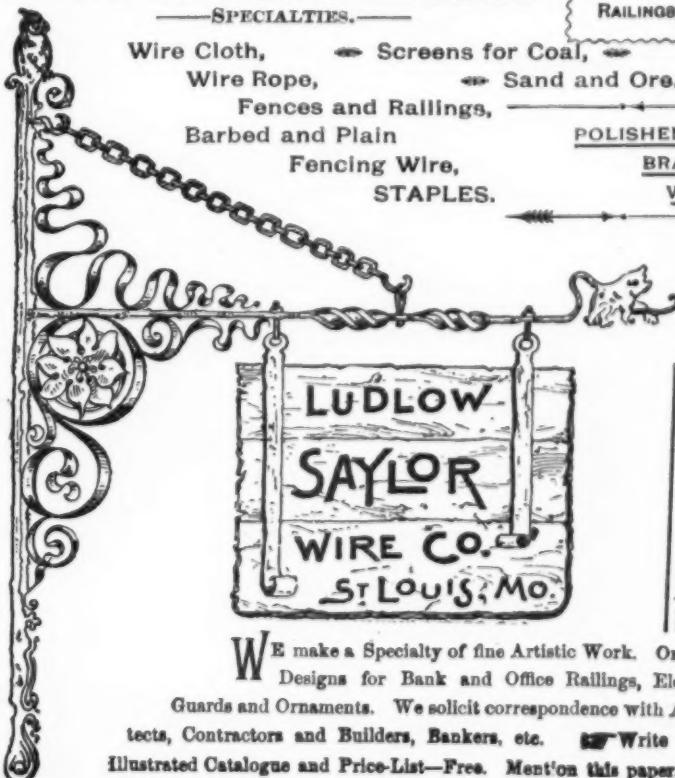
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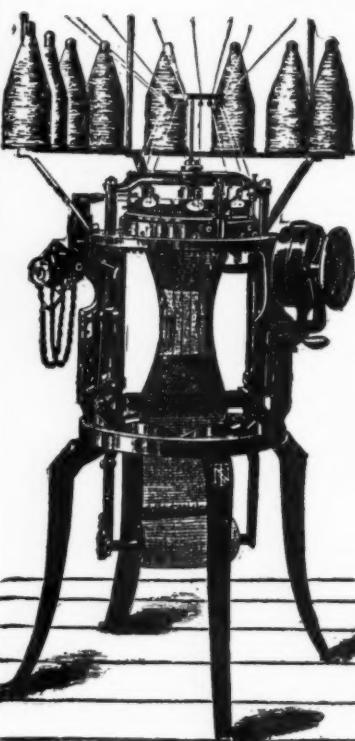
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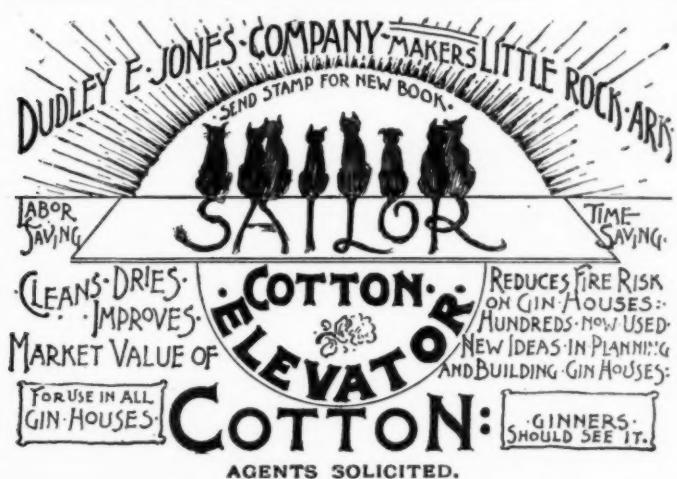
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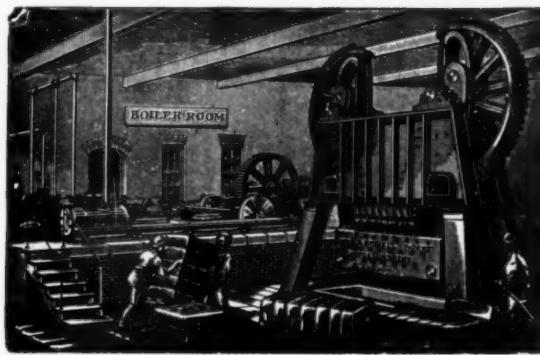
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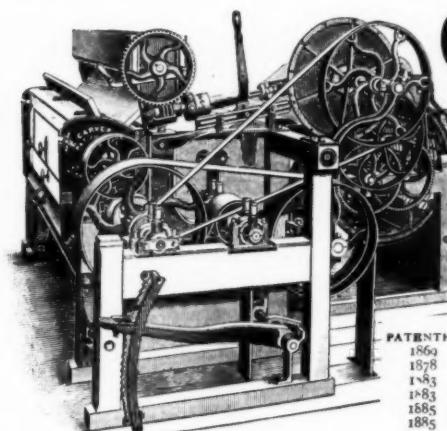
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Nine Tents of the Linters used in the United States are of our make.

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Fig. 2.—The National Cotton Gin.

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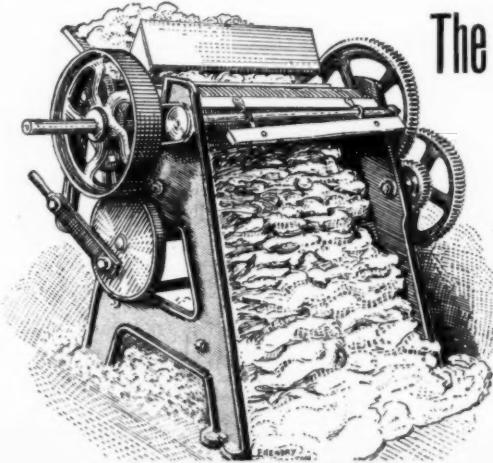
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Fig. 1.—The National Cotton Gin.

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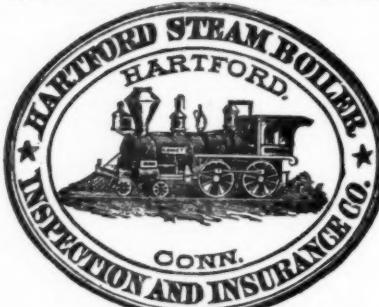
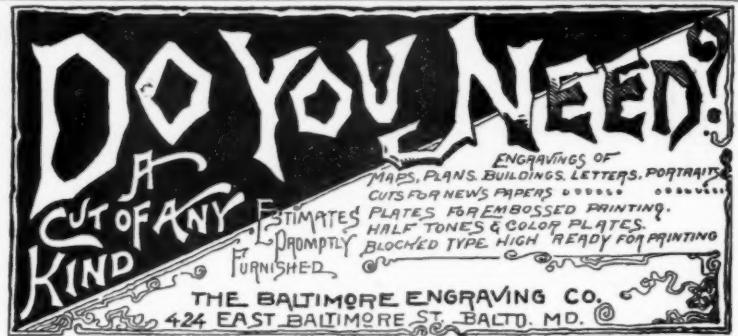
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Short Freight Line to Westminster, Frederick, Taneytown and Hagerstown, Md.; Waynesboro, Chambersburg, Shippensburg, Hanover, Gettysburg and Carlisle, Pa.; also points on the Frederick Division P. R. R., Gettysburg & Harrisburg R. R., Harrisburg & Potomac R. R., Shenandoah Valley R. R., Norfolk & Western R. R. and connections, also route of

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A LARGE PROFIT ON A SMALL INVESTMENT

If so, send immediately for Prospectus of THE MONARCH COAL & COKE COMPANY. The offer of this Company is one of the choicest ever made to the investing public.

50,000 ACRES of selected Coal Property secured, containing **SEVEN WORKABLE VEINS** above drainage, including the celebrated "Elkhorn" 7-ft. vein of coking coal, and a remarkable 33-in. vein of Cannel coal of the finest quality.

Every acre of this property contains, at a low estimate, $28\frac{1}{4}$ feet of workable coals above drainage, worth on the low basis of 10 cents a ton royalty, **\$2,825** an acre.

This magnificent area of coal, containing such a wonderful deposit, quantity and quality considered, has been capitalized on the *bed-rock* basis of **\$10 an acre** for the coal, and \$2 an acre for working capital. The stock of the Company has been divided into 50,000 shares, so that *each share represents an acre of coal*; par value of each share \$12.

\$2,825 for \$12. ABSOLUTELY NO RISK.

This is certainly one of the most substantial enterprises ever offered to the public. The property of the Company cannot be lost. The management is always under the control of the stockholders, and mismanagement cannot be continued long enough to injure or affect the great value of its property. It is safer than bank stocks, for no cashier can carry it off to Canada. The coal is there in wonderful quantity and of the finest quality.

These coals have been demonstrated by the State Geological Survey of Kentucky, and by actual openings on the property of this Company.

The location of the property is admirable for transportation facilities and markets by rail or water, or both. Freight rates by rail will thus be maintained at a minimum by water competition.

REMEMBER, Each \$12 Share of Stock Represents ONE ACRE of Coal Worth \$2,825 at 10 cents Royalty.

TERMS OF SUBSCRIPTION.

The stock of this splendid enterprise is sold at par—\$12 per share—payable as follows:

One dollar at the time of subscription, and eleven monthly payments of one dollar each, deferred payments commencing on the 10th day of the month following the month of subscription. These remarkably easy terms of subscription place this stock within the reach of all classes of savers and investors, and give them an opportunity to invest in a valuable coal property such as they have never had before.

THE OPPORTUNITY OF A LIFE.—Parties wishing to secure a block of this stock on the "ground floor," should apply at once and investigate thoroughly. This stock is certain to realize enormous profits. Its great intrinsic merit, its soundness, its absolute freedom from risk, the certainty of immense profit, and the easy terms of subscription, assure the entire subscription of the Company's capital in a very short time. Wishing to secure any of it, you must therefore act promptly. For prospectus and other particulars send your address to

THE MONARCH COAL & COKE CO.

KNOXVILLE, TENN.

RELIABLE AGENTS WANTED. Write for particulars, giving references.

EDWARD F. POWERS,
President.

JOHN M. BROOKS,
Manager.

MIDDLESBOROUGH

Is located in Bell County, Kentucky, near the junction of the three States of Virginia, Kentucky and Tennessee with the Cumberland Mountain at a point where that mountain is most heavily freighted with its precious stores of Coking Coals, Iron Ores and Limestone.

It is 1,080 feet above sea-level. Its limits extend virtually from Cumberland Gap westward six miles, with a width of three and a-half to four miles north and south.

Through the tunnel at Cumberland Gap, towards which all railways for this region converge, communication is established with the seaboard and the entire system of railway and water transportation in America. Middlesborough also enjoys Postal, Telegraph, Express, Banking and Insurance Facilities with all the business world.

MANUFACTURERS AND INVESTORS

Are invited to make a thorough investigation of the MINERAL AND TIMBER RESOURCES of

MIDDLESBOROUGH, KY.

For in the origin and development of the town the primary cardinal points why a town should be built exist here to a pre-eminent degree.

Middlesborough occupies a POSITION second to none in the United States as regard coal and iron.

The Natural Resources are in such wonderful profusion and are so easy of development that it is only a question of time when a great Industrial and Manufacturing city will surely be built to consume the great Mineral and Timber Wealth which nature has deposited here with such a prodigal hand.

There are already built:

Two Large Iron Furnaces,
An Immense Steel Plant,
A Mammoth Tannery (in operation),
A Brewery, Cold-Storage and Ice Manufacturing Plant,

A Belt Railroad, 23 miles long,
Water Works, Electric-Light Plant,
Foundries, Saw Mills, Planing Mills,
Furniture and Bent Wood Factories,
Telephone and Electric Street Car Systems

And other smaller plants of various descriptions.

THE MIDDLESBOROUGH TOWN LANDS COMPANY,

MIDDLESBOROUGH, KY.

Address all communications to the Manager.

THE NEWPORT NEWS BUILDING COMPANY.

Authorized Capital \$500,000.

Shares \$100 Each.

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 GEORGE A. SCHMELZ, Newport News, Va., TREASURER.
 L. P. ROUTT, Richmond, Va., GENERAL AGENT.

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 E. A. CATLIN, Richmond, Va., President Security Savings Bank.
 W. C. SEDDON, Baltimore, Md., of W. C. Seddon & Co., Bankers and Brokers.
 HON. GEORGE D. WISE, Richmond, Va., Member of Congress Third Congressional District of Virginia.
 GEORGE A. SCHMELZ, Newport News, Va., of Schmelz Brothers, Bankers.
 C. M. BRAXTON, Newport News, Va., Vice-President First National Bank.

THE NEWPORT NEWS BUILDING COMPANY.

The Newport News Building Company, duly incorporated under the laws of the State of Virginia, has secured three hundred beautiful residence lots at Newport News for the purpose of erecting buildings thereon and otherwise improving the property.

FINANCIAL PLAN.

The financial plan of the company is as follows:

The capital stock is to be \$500,000, divided into shares of \$100 each.

Under the charter, when \$60 per share shall have been paid on each share of stock, no further assessments will be made, and full-paid certificates will be issued to the holders thereof.

The payments for stock are to be as follows:

\$5 per share upon date of subscription.

\$5 per share in one month.

\$5 per share in two months.

\$5 per share in three months.

\$5 per share in four months.

\$5 per share in six months.

\$5 per share in eight months.

\$5 per share in ten months.

\$5 per share in twelve months.

\$5 per share in fourteen months.

\$5 per share in sixteen months.

\$5 per share in eighteen months.

Building companies doing business upon this plan have paid dividends ranging from 12 to 20 per cent per annum. It is confidently believed that with the superior advantages possessed by this company it can do equally as well.

REDEMPTION OF STOCK.

Stock, when fully paid in accordance with this prospectus, will be received by the company in payment for houses or lots at \$65 per share, being a premium of \$5 per share over cost of same.

BEAUTIFUL LOCATION.

The company's property lies very near Newport News and between Newport News and Hampton.

GOOD AGENTS WANTED.

The Chesapeake & Ohio Railway runs near it, and the electric line connecting Newport News, Hampton and Old Point places it within a few minute's ride of the business centre of the former city. No lot will be over five blocks from the electric line.

Every lot commands a view of Hampton Roads, and it can be honestly said that no property in the Newport News section is more desirable for residence purposes, for it is right in the line of all the valuable and fashionable development which is now attracting so much attention.

WONDERFUL DEVELOPMENT.

When it is remembered that the growth of Newport News is rapid and substantial (it has now a population of about 8,000); that the wages paid here are better than in almost any other city in the country; that the finest dry-dock and ship-building works in the world are here; that a great number of other important industries are in operation, and that others are projected; that a high class of skilled workmen find ready employment, and that such workmen are coming in by hundreds; that one of the greatest trunk lines in the United States has its deep-water terminus here; that northern and foreign capital is pouring into this section by the million, it is not surprising that the real estate business and the building trades are more active here than in any other new city in the country.

DEMAND FOR HOUSES.

A lively demand for new houses and the phenomenal success of building companies are among the causes that brought about the organization of this company.

The property of the company has been secured at a comparatively low figure—prices having been agreed upon before the recent advances in real estate—and it is believed the company will not only make money, but big money. Indeed, no such solid and attractive scheme of this character has been organized in recent times. If the company had a house on every one of its lots to-day there would be tenants or purchasers for all of them.

MONTHLY INSTALLMENTS.

Houses built by the company will be sold upon easy monthly installments or otherwise.

For further information apply to

THE NEWPORT NEWS BUILDING COMPANY,
 821 East Main Street, Richmond, Va.

FILL UP the following BLANK and forward, with \$5 per share, to either the Secretary or General Agent at Richmond, Va.

I, _____, of _____

State of _____ do hereby subscribe to

Shares of the Capital Stock of THE NEWPORT NEWS BUILDING CO., on the terms and conditions set forth in the printed Prospectus of said Company, receipt of a copy of which I do hereby acknowledge, and the same is hereby made the basis and a part of this Contract between me and said Company.

This _____ day of _____ 189

Subscriber.

No. of Street _____

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Of Iron and Wood and for General Industrial and
Business Enterprises.

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INVITES INVESTIGATION.

Its location, at the junction of the Norfolk & Western Railroad (Shenandoah Valley line) and the Richmond & Danville's branch, give it excellent transportation facilities. It is only a few hours' ride distant from Washington.

The Norfolk & Western's direct line to Washington will be built from Front Royal.

There is no Finer Agricultural Country in the World than the Famed Shenandoah Valley, in which Front Royal is Located.

A WIDE RIVER WITH SWIFT CURRENT FURNISHES WATER POWER
AND MAKES DRAINAGE PERFECT.

Front Royal is a Prosperous Town, with an Extensive Mercantile Business
and Many Manufacturing Enterprises in Operation and
Under Construction.

INVESTIGATION OF ITS ADVANTAGES IS INVITED BY THE

Front Royal--Riverton Improvement Company,
FRONT ROYAL, VIRGINIA.

NORTH WILKESBORO,

NORTH CAROLINA,

One of the Conspicuous Successes of the Year in Town Building,
Presents the Following Record:

Population March 4, 1891, actual count, 48.

Population March 4, 1892, actual count, 348.

Gain in one year 625 per cent.

Townsite purchased November 11, 1890; act of incorporation passed by the Legislature, March 4, 1891; first lot sold at private sale, May 12, 1891. Within the first year of its existence ten miles of streets have been graded, and \$22,000 spent in public improvements. Where prior to March 4, 1891, there was only a farm settlement without pretensions to being even a village, there is to-day a thriving, busy, growing, trading and manufacturing center, with

A Large Well-Kept Hotel,
The Bank of North Wilkesboro, \$40,000 Capital,
A large Livery and Sale Stable,
Two Large Wholesale Stores,
One Hardware Store,
One Furniture Store,
Ten General Merchandise Stores,
Three Saw Mills, Sash and Blind Factories,
One Foundry and Machine Shop,
A Handsome, Well-Edited, Home Print Newspaper, The North Wilkesboro News,
One School,
Two Churches Under Way,

Two Brick Yards in operation, and a number of other enterprises practically secured.

Arrangements are about completed for a Woolen Mill.

A large iron front brick block, containing Bank Building, two Store Rooms, Opera House, and Printing Office; A graded School Building and an Iron Bridge across the Yadkin River, in the Eastern part of town, will be completed during the spring and summer.

Turnpike roads to Tennessee and Virginia are about completed; county roads leading into town are being improved and numerous good new ones built, with the intention of making this the center for all the wagon trade of this section.

A tobacco warehouse for the sale of the high grade leaf of this district will be built during the summer, so as to give a home market for the tobacco crop that will be grown this year.

Compare this record with that of any other new tow you have heard of during the past dull season.

NORTH WILKESBORO,

Is 75 miles west of Winston-Salem, at the present terminus of the Northwestern North Carolina Railroad, which when ultimately completed to Bristol, Tenn., will give the shortest route between Norfolk and Cincinnati. North Wilkesboro is the most important trading point between Winston-Salem and Bristol, and is in the center of the great undeveloped mineral and timber district of Northwestern North Carolina, being by United States Postal Map on an air line 75 miles southeast of Bristol, 45 miles east of Cranberry, N. C., 40 miles north of Statesville, 45 miles northeast of Hickory, 90 miles northeast of Asheville, 45 miles southeast of Mt. Airy, and 80 miles south of the Norfolk & Western Railroad, in the valley of the Yadkin, between the Brushy Mountains on the South and the Blue Ridge on the North. Climate, healthfulness, water, drainage and location unsurpassed by any town in North Carolina.

The townsite consists of 1,088 acres, located, by the way on a farm originally owned by General John B. Gordon's grandfather. The first public auction sale of lots was held December 2, 1891, and 188 lots were sold. Purchasers have in many cases been able to resell at a handsome profit. The company has sold 50 lots at private sale since then, on many of which houses are now being erected. It is a significant fact that among the business buildings erected a large per cent. are substantial brick structures, while for architectural beauty and cost many of the residences are much superior to those usually found in a town so young.

At the second auction sale, May 11th, 1892, 35 business lots and 44 residence lots sold for \$16,490, an average of \$8.35 per front foot, which is \$2.53 per front foot (or 44 per cent.) more than the average at the sale last December, which was the best sale made in North Carolina during last year. Since the sale, a contract has been closed for the location of another large saw mill, planing mill, sash, door and blind factory combined, which will do a large shipping business. A contract is closed for the location of extract works with a capital stock of \$300,000. The plant will cost \$125,000 and will cover six acres of land. Twelve families from the North will move down. The company will erect a large electric-light plant in connection with the extract works. North Wilkesboro will get there and will not be long doing so.

Through the townsite runs a stratum of serpentine stone, 200 feet in width, and also a bed of iron ore equal in quality to that of Cranberry. The Town Company also owns 4,100 acres of mineral, granite and timber lands in Wilkes County. It is probable that the work of developing the great mineral and timber interests of the section will be commenced in a short time, and on an extensive scale.

Sites will be donated and stock subscribed to such manufacturing enterprises as may be advantageously located here.

The policy of the Company is a most liberal one in this respect, it being determined to aid all legitimate enterprises to any reasonable extent. There are 328 miles of water courses within the borders of Wilkes County, furnishing to the vicinity of North Wilkesboro a water power as great as Fall River. The climate, while not moist, is neither harsh nor dry, and is especially suitable to the spinning of fine cotton yarns, such as cannot be made in the extreme South or North. There is also a fine opportunity here for bleacheries, to the establishment of which at Southern points there is a tendency at present. As they can't go where sluggish streams, impregnated with vegetable matter, abound, the quick flowing streams of clear mountain water, so numerous about North Wilkesboro, afford everything desired. Numerous other industries will do well at North Wilkesboro, and will be most substantially encouraged to locate there.

Capitalists, Home Seekers, Health Seekers, Manufacturers of wood and iron, and many other industrial workers may well investigate North Wilkesboro's advantages.

The above-described townsite and other property belongs to the Winston Land & Improvement Co., which was chartered by act of Legislature, session of 1887; ratified March 4, 1887, chapter 82. Authorized capital \$1,000,000. Present capital stock \$125,000, all subscribed and paid up.

OFFICERS—G. W. HINSHAW, President, of Hinshaw & Medearis, Wholesale Merchants; Vice-President People's National Bank, Winston, N. C. DR. W. L. BROWN, Vice-President, of Brown Brothers, Tobacco Manufacturers, Winston, N. C. W. F. TROGDON, Secretary and Treasurer, North Wilkesboro, N. C.

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PLATS, PRICES AND ANY DESIRED INFORMATION PROMPTLY FURNISHED ON APPLICATION TO

W. F. TROGDON, Secretary and Treasurer,

NORTH WILKESBORO, N. C.

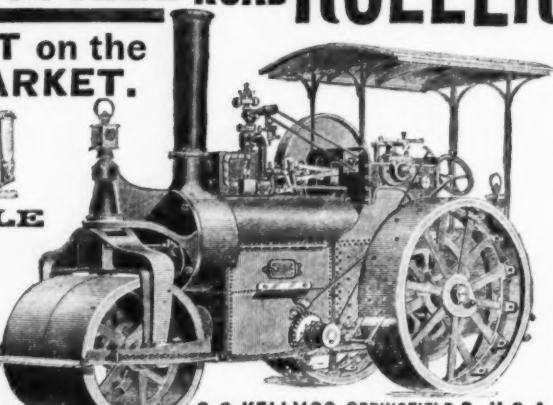
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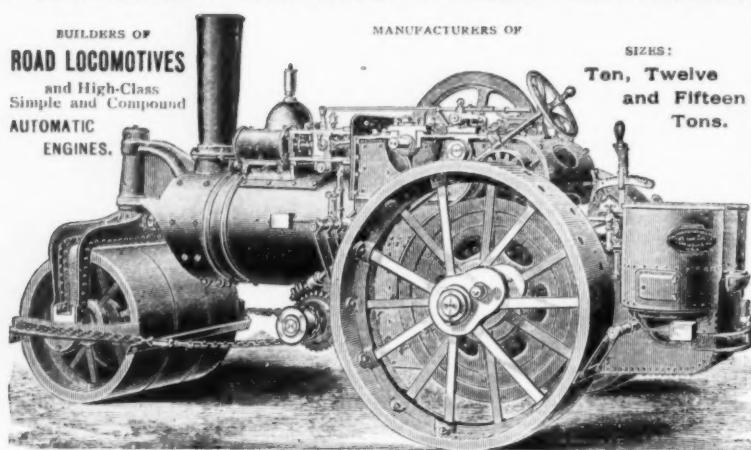
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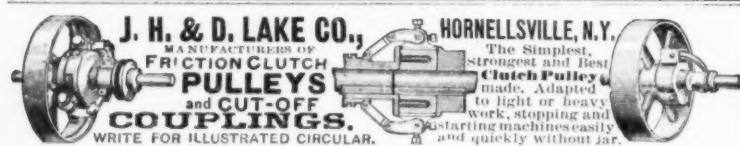
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LEATHER LINK AND IRON ROD BELT
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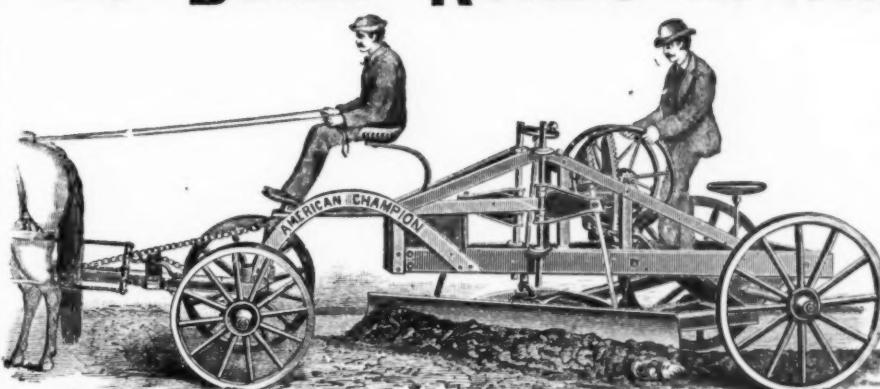
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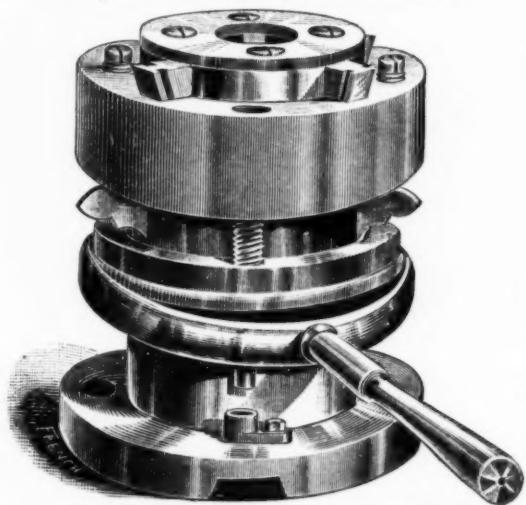
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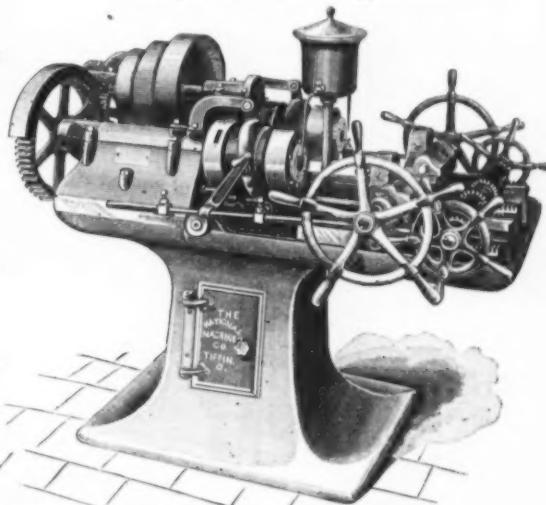
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Wood Split Pulleys,
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Will Not Slip on
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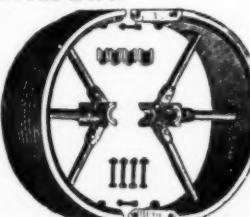


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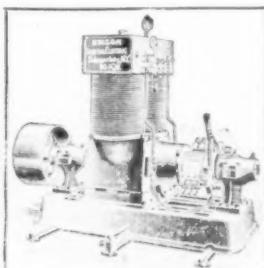
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Ammwg, Fred J.	6	Dimmock, M. J.	47	L				
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Bonaparte, Chas. J.	*	Fitzsimeon, Geo. A.	49	Males, A. S., & Co.	49	Z		
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Box Factory.	48	Fitzsimeon, Geo. A.	49	Mariion Steam Shovel Co.	2	* Not in this issue.		
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Brennan & Co.	60	Fitzsimeon, Geo. A.	49	Main Belting Co.	68			
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Brinkerhoff & Co.	21	Fitzsimeon, Geo. A.	49	Manufacture.	47			
Bristol's Mfg. Co.	68	Fitzsimeon, Geo. A.	49	Mariion Steam Shovel Co.	2			
Bristol, T. H. & Co.	68	Fitzsimeon, Geo. A.	49	Marsie Machine Co.	48			
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Brown Hoisting & Conveying Machine Co.	2	Fitzsimeon, Geo. A.	49	Maryland Machine Co.	48			
Brown & King Supply Co.	58	Fitzsimeon, Geo. A.	49	Maryland Machine Co.	48			
Buckeye Engine Co.	22	Fitzsimeon, Geo. A.	49	Maryland Machine Co.	48			
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Burnham Bros.	52	Fitzsimeon, Geo. A.	49	Maryland Machine Co.	48			
Bushnell Co., G. H.	58	Fitzsimeon, Geo. A.	49	Maryland Machine Co.	48			
Byers Machine Co., Jno. F.	14	Fitzsimeon, Geo. A.	49	Maryland Machine Co.	48			
C		G		M				
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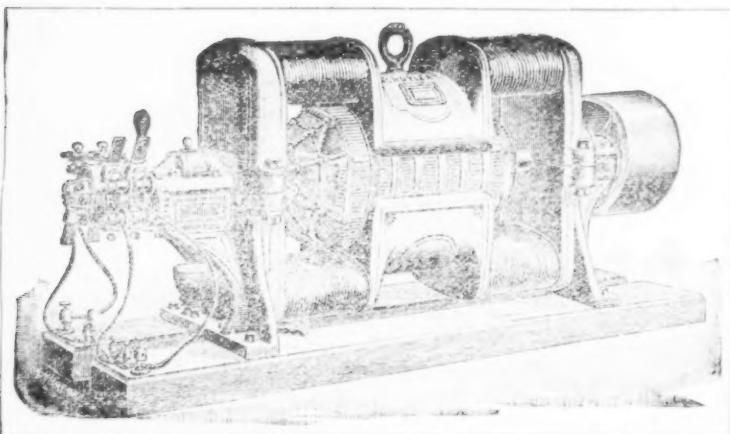
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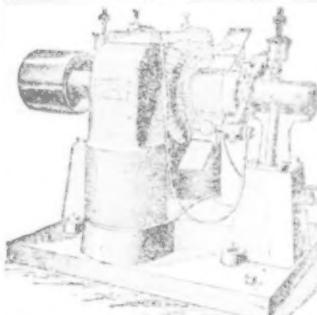
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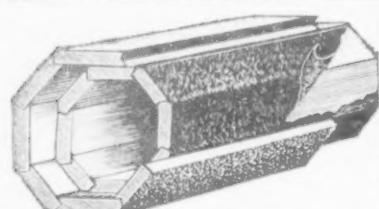
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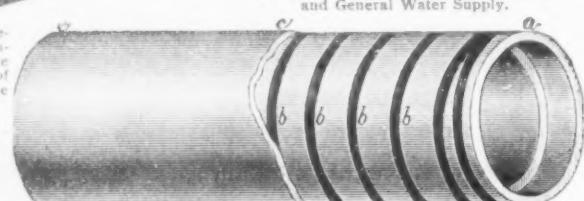
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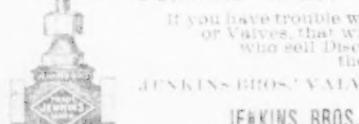
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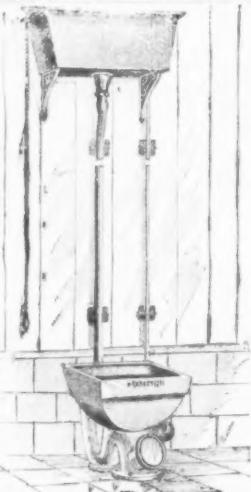
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